JUN 29 1923

The

British Medical Journal

THE JOURNAL OF THE BRITISH MEDICAL ASSOCIATION.

Including an Epitome of Current Medical Literature.

WITH SUPPLEMENT.

No. 3259. SATURDAY, JUNE 16, 1923. **Price 1/3**

AURAL SURGERY
A HANDBOOK FOR THE STUDENT & PRACTITIONER
By WILLIAM WILSON, M.D.
Surgeon, St. John's Hosp. for the Ear, Manchester; Oto-Laryngologist, Withington, Crumpsall and Booth Hall Infirmaries, Manchester.
15s. net.
The Journal of Laryngology.—"A trustworthy guide for the busy practitioner as well as the senior student.....It may be confidently recommended."
MESSRS. SHERRATT & HUGHES, Manchester.

NOW READY. Demy 8vo. Pp. xii + 196. With 50 Figs. Price 10s. 6d. net (postage 6d.).
DISEASES OF THE HEART:
A HANDBOOK FOR PRACTITIONERS & STUDENTS
Containing an Account of Clinical Electrocardiography.
By I. HARRIS, M.D., L.R.C.P.(Ed.), Hon. Physician-in-Charge, Cardiographic Department, Liverpool Northern Hospital.
BAILLIÈRE, TINDALL & COX, 8, Henrietta Street, Covent Garden, W.C. 2.

ANÆSTHETICS IN PRACTICE AND THEORY.
By JOSEPH BLOMFIELD, O.B.E., M.D.
25s. net.
Brit. Jour. Surg.—"The author has done a good service to the profession by writing this work."
WM. HEINEMANN (Medical Books) Ltd., 20, Bedford Street,, London W.C.

OXFORD MEDICAL PUBLICATIONS
IN THE PRESS. READY SHORTLY.
HÆMORRHOIDS:
THEIR ÆTIOLOGY, PROPHYLAXIS AND TREATMENT BY MEANS OF INJECTIONS.
By ARTHUR S. MORLEY, F.R.C.S.Eng., Late Temporary Assistant Surgeon to St. Mark's Hospital for Cancer, Fistula and other Diseases of the Rectum.
Demy 8vo. Cloth. Illustrated. 6s. net.
HENRY FROWDE and HODDER & STOUGHTON, The LANCET Building, 1 & 2, Bedford Street, Strand, London, W.C. 2.

SURGERY BOOKS.
GASK & WILSON'S SURGERY. 506 Illus. 30s. net.
BOWLBY & ANDREWES' PATHOLOGY. 30s. net.
WILLIAMS' MINOR SURGERY. 239 Illus. 10s. 6d. net.
ROWLANDS & TURNER'S OPERATIONS. £2 10s. net.
TAYLOR'S OPERATIVE SURGERY. 32s. net.
J. & A. CHURCHILL, 7, Great Marlborough St., W.1.

Fully illustrated. Price 10s. 6d. net.
ORTHOPÆDICS FOR PRACTITIONERS.
An Introduction to the Practical Treatment of the Commoner Deformities.
By PAUL BERNARD ROTH, M.B., Ch.B.Aberd., F.R.C.S.Eng., Orthopædic Surgeon, Miller General Hospital, &c.
London: EDWARD ARNOLD & Co., Maddox St., W.1.

By LESLIE THORNE THORNE, M.D., B.S., etc.
NAUHEIM TREATMENT
IN ENGLAND OF DISEASES OF THE HEART AND VESSELS.
Sixth Edition, much new matter. Price 7/6 net.
Pp. viii + 232, with 27 Photos of Resistance—Exercises and 108 other Illustrations, Polygraphs, etc.
"It is the best and most practical work on the subject."—*West London Medical Journal.*
BAILLIÈRE, TINDALL & COX, 8, Henrietta St., Covent Garden, London, W.C. 2.

TREATMENT OF DISEASES OF THE SKIN. 3RD EDITION. 12s. 6d net.
By KNOWSLEY SIBLEY, M.D.Camb.
London: EDWARD ARNOLD & Co., Maddox St., W.

Crown 8vo. Pp. x. + 181. Price 5s net, postage 5d.
AN INDEX TO GENERAL PRACTICE.
By A. CAMPBELL STARK, M.B. & B.S.Lond.,
BAILLIÈRE, TINDALL & COX, 8, Henrietta St., W.C.2.

A PERSONAL INTERVIEW
IN MATTERS RELATING TO INSURANCE POLICIES SAVES TIME, AND POINTS CAN BE EXPLAINED WHERE DOUBT EXISTS, IN LESS TIME AND MORE SATISFACTORILY THAN BY CORRESPONDENCE.
THE MEDICAL INSURANCE AGENCY will be represented in the Exhibition arranged in connection with the British Medical Association Meeting at Portsmouth. If you are attending the Meeting call at STAND No. 64. There will be much to interest you!
YOUR FIRE, &c., INSURANCES are probably falling due for renewal on June 24th next. Are you adequately protected under up-to-date and first-class contracts? If not, write to
THE MEDICAL INSURANCE AGENCY (Dept. H.O.J.),
c/o BRITISH MEDICAL ASSOCIATION, 429, STRAND, LONDON, W.C. 2
for a copy of the latest Prospectus dealing with all Household Insurances.
THE MEDICAL INSURANCE AGENCY EXISTS TO PROTECT YOUR INTERESTS AND SAVE YOUR MONEY.

Royal National Orthopædic Hospital
COUNTRY BRANCH
BROCKLEY HILL, STANMORE, MIDDLESEX. Telephone: Stanmore 30.

(12 Miles from Marble Arch, down Edgware Road towards Elstree).

OPEN AIR WARDS

SUN CURE

Ideal situation, approximately 500 feet above sea-level, and all upon gravel soil.

Approved by Minister of Health for treatment of Surgical Tuberculosis.

(Patients contribute up to £2 2s. a week).

100 Beds already available.

For particulars apply Secretary, 234, Great Portland Street, London, W. 1.

"BI-PALATINOIDS"
REGISTERED

OF PURE NASCENT FERROUS CARBONATE.

THAT Ferrous Carbonate must be administered in a nascent state has been proved beyond shadow of doubt, and this object is achieved by the use of bi-palatinoids—gelatin capsules divided into two compartments: one contains the alkaline carbonate and the other the iron sulphate. Not until the stomach is reached does the double reaction take place, thus nascent Ferrous carbonate is formed in the ideal condition for assimilation.

TEST-TUBE TRIAL: Place a Bi-Palatinoid of Pure Nascent Ferrous Carbonate in a little warm water in a test tube. Observe when a white precipitate occurs and then add sufficient HCL to make a 0.2 per cent. solution; notice that the whole of the precipitate goes into solution. If the precipitate be allowed to stand, it becomes green; it will then require a much stronger acid solution to dissolve it. This fact clearly demonstrates that the nascent carbonate is more easily assimilated.

The Scientific Grants Committee of the British Medical Association instituted a research into the treatment of anæmia and chlorosis, under the supervision of a well-known physician. In his report the following appears: "So far as these observations go they show that carbonate of iron in the form of the bi-palatinoid or Blaud Pills gave the best results compared with other preparations of iron containing an equivalent amount of the metal.

The LANCET says:—"The employment of Bi-palatinoids places the administration of exceedingly unstable compounds like ferrous carbonate, phosphate and arsenate upon a sounder and more scientific basis."

Clinical Sample and Literature on request from—

OPPENHEIMER, SON & CO., LIMITED,
179, QUEEN VICTORIA STREET, LONDON, E.C. 4.

TRADE MARK

A Post-Graduate Lecture
ON THE
TREATMENT OF UTERINE FIBROIDS:
OPERATION OR RADIATION?

DELIVERED AT THE MANCHESTER ROYAL INFIRMARY
BY

WM. FLETCHER SHAW, M.D.,
LECTURER IN OBSTETRICS AND GYNAECOLOGY, VICTORIA UNIVERSITY, MANCHESTER; HONORARY ASSISTANT GYNAECOLOGICAL SURGEON, MANCHESTER ROYAL INFIRMARY; SENIOR HONORARY ASSISTANT SURGEON FOR WOMEN, ST. MARY'S HOSPITAL, MANCHESTER.

DURING the last few years there has been a flood of literature, chiefly from radiologists, pleading for radiation treatment of uterine fibroids rather than operation, and making the claim that the haemorrhage can be controlled by this means without any mortality; but from the first the more reliable authorities have recognized certain complications of fibroids as a contraindication to radiation, and this note of warning has been sounded more and more vigorously until now, when many of the radiologists advise operation in all cases in which there is no special contraindication to it.

At first sight radiation would seem to be a great advance in our method of treatment, but when the subject is considered more seriously there are found to be many fallacies and reservations.

In the first place, these papers usually discuss the subject as though haemorrhage was the only symptom. In the majority of instances it is the most obvious symptom, but it is by no means the only one to be considered, and in reviewing the whole subject the others must be conceded their due importance. Fibroids are very prone to undergo degeneration, and this is especially common about or after the menopause, so that many women who have safely passed the menopause require operation, and often an urgent operation, because of this complication. Along with this must be considered the liability of a fibroid uterus to become malignant: there is a considerable divergence of opinion upon the percentage of fibroids which become malignant, but there is no doubt that uteri with these tumours are more prone to this disease than normal uteri.

This aspect of the subject is entirely overlooked by many of the radiologists, who record their cases at too recent a date to allow this change to occur. There is no reason to suppose that when the menopause has been produced artificially by radiation the uterus is less liable to degeneration or malignant disease than one which has passed it naturally. Although my experience of radiation treatment of fibroids is small, I have once had to perform hysterectomy for urgent symptoms of degeneration six years after the menopause had been produced by this method. Before claims so extensive as those advanced by some authors are made it would be well to wait ten or fifteen years before recording the after-results. Moreover, good results are not claimed in the treatment of all fibroids. The cases must be carefully selected and radiation must not be used if the tumour is already undergoing degeneration or is complicated by inflamed appendages. How these conditions are to be diagnosed with certainty is not stated; the responsibility is to be left to a gynaecologist in each case, but, as every gynaecologist knows, it is often quite impossible to say before operation whether a fibroid is undergoing degeneration or is complicated by inflamed appendages.

One further point against treatment by radiation is the method of its action, which is supposed to stop menstruation through the action of the rays on the ovaries. In this way a young woman is as effectually sterilized as by a radical operation; whereas, if operation is undertaken instead of radiation, it is frequently found possible to do a myomectomy and leave a sound functioning uterus and ovaries.

Quite recently Giles[1] and Bonney[2] have usefully called attention to the advantages of myomectomy and pleaded for its more frequent use, although I think the operation is done much more frequently than they believe. It is such a well recognized operation that surgeons perform it in certain classes of case but do not trouble to write about it. In the figures I quote later I am considering solely the advantages and disadvantages of operation and radiation, and as the risks and complications of myomectomy are about the same as those of hysterectomy I have not separated them. For these reasons I have always considered operation much the safer method of treatment, and would not consider radiation except in rare and carefully selected cases.

The only serious risk in operation for fibroids is the occurrence of embolism—fortunately a very rare accident, but a risk which is ever present, although an operator is lulled into a feeling of false security when no case has occurred for a long period. From this comfortable feeling of security I was rudely awakened by two fatal cases of embolism which occurred quite close together in my practice, and I was compelled to reconsider the whole subject very carefully, as it is a tremendous responsibility to advise a method of treatment which may be dangerous if there is an alternative treatment quite free from danger.

To form a reliable opinion of the relative results of these two methods of treatment it is useless to take a few picked cases; a sufficiently long series of consecutive cases must be taken, all treated by the one method, and the failures recorded. With this object I abstracted the notes of all the cases of uterine fibroids I had seen in the two years 1920-21—a period which included my two cases fatal from embolism.

In several of these cases the fibroids were so small and gave rise to so few symptoms that no treatment was advised, while in the remainder the only method of treatment was operation; so this can be taken as a consecutive series of cases treated by operation, and the number (138) is sufficiently large to give a fair average percentage of the risks of operation and the incidence of malignancy, degeneration, and other complications if the tumour is not removed. Amongst these cases were a certain number, undiagnosed before operation, with complications which could only have led to a fatal result if the whole series had been treated by radiation.

Mortality.

In this series of 138 operations (hysterectomy or myomectomy) there were four deaths (2.9 per cent.)—two from embolism, one from shock within twenty-four hours of the operation, and one from acute nephritis. Operations upon uterine fibroids have a somewhat greater risk than other simple abdominal operations owing to the anaemic condition of so many of the patients. In this series I find recorded in the notes of five of these patients that they were so anaemic I hesitated to operate, and in three instances kept the patient in bed some time before operation; amongst these five occurred three of my fatal cases, two of embolism and one of shock. If these cases had been handed over to the radiologist the only fatal case would have been the one from acute nephritis, the cause of which was obscure.

However, in trying to hold the balance evenly between the two methods of treatment I must put these four deaths against operation, and I am also accepting the statement that with radiation there would have been no primary mortality.

Malignant Disease.

Unfortunately, a microscopical examination was not made of all the specimens removed and it is quite possible that some cases of unsuspected malignancy were overlooked. Amongst those which were examined were five specimens of malignant disease of the body, all in women over 50 years of age, so it is quite probable the incidence would have been greater if all these fibroids had been unoperated upon until the patients had reached this age. In two of these cases the patients had ceased to menstruate and so the malignancy was suspected, but in the others there had been no period of amenorrhoea and the malignancy was only discovered in the laboratory.

If all this series of fibroids had been treated by radiation rather than operation the growth would have run its course and there would have been five deaths from this disease as against the four deaths from operation.

In addition to these five cases of malignant disease of the body there were three other cases with carcinoma of the cervix occurring along with fibroids of the body. I have separated these two groups as it is much easier to diagnose carcinoma of the cervix; nevertheless two of these patients

were referred to me by their own doctors on account of the fibroids, the carcinoma of the cervix having been overlooked in each case; had radiation been the recognized treatment for fibroids, the probability is that these growths would have remained undiscovered until a much later period, as the radiologist has no more special training in gynaecological diagnosis than the general practitioner.

Degeneration.

A degenerating fibroid may cause serious symptoms, either from the effect of the degeneration itself as in red degeneration, or because the degenerated tissue has become infected with organisms, or merely from the absorption of the products of degeneration. This last is, I think, much more important than is usually recognized, and accounts for the profound anaemia, often out of all proportion to the amount of blood lost, and the general ill health from which these patients suffer.

Unfortunately not all the specimens in this series were examined in the laboratory, but of those which were, twenty-one were reported as having undergone degeneration—cystic, red, calcareous, etc.; these degenerations occur much more frequently in fibroid uteri after the menopause when the blood supply is much diminished.

How often degeneration occurs in a fibroid after an artificial menopause produced by radiation I cannot say, my personal experience of this method of treatment being very small, but I see no reason to suppose its incidence to be less than in fibroids after a natural menopause, and I have seen one case which required operation six years after an artificial menopause produced by *x* rays. This complication is often overlooked in the papers advocating radiation, as the cases are too recent, and it would be useful to have some of these series reviewed ten or twenty years later.

It is impossible to say what would have happened to all these cases if they had been treated by radiation; I do not suggest all would have ended fatally, though probably some would; and certainly some would have required operation at a later date for urgent symptoms, when the patient's condition would make operation a much more serious matter. This danger is recognized by many radiologists, and the more experienced of them advise all cases of fibroid to be examined by a gynaecologist so as to eliminate degenerations of the tumour; but the great difficulty is to be sure without operation that a tumour is not undergoing degeneration, and the instances must be few in which a competent gynaecologist will take the full responsibility of saying there is no degeneration.

Inflamed Appendages.

This is a complication which precludes treatment by radiation, according to the authorities on this method of treatment. Of course, acute inflammation will usually give rise to acute symptoms which are easily recognized, but there are cases which only come under treatment after the acute symptoms have subsided. In this series there was only one case which could not be included in one or other of the categories, but there were several others with inflamed appendages complicated with degenerating fibroids or with adhesions to rectum or intestines.

Adhesions.

Adhesions firmly binding rectum, bladder, or intestines to the tumour contraindicate the use of radiation, and yet how often do we unexpectedly find these adhesions during an operation! The following case—one of the last in this series—is an instance:

An unmarried woman, aged 49, one year past the menopause, with no previous history of inflammation, was brought to me because of recurring haemorrhage. Examination revealed the presence of a fibroid uterus about the size of an orange, apparently quite mobile; there were no symptoms or signs suggesting degeneration, and it was just the case which would be referred to the radiologist if this form of treatment were used. I opened the abdomen and found both tubes and ovaries firmly adherent to the back of the uterus, but before I could find the tubes and the uterus, I had to separate the rectum and bladder from these organs and from each other. These adhesions were so firm that the rectum had to be cut off from the uterus and appendages, not stripped, as is usually possible.

In all probability these cases with unsuspected adherent rectum and intestines explain the damage to these organs which is occasionally reported after the use of *x* rays. In this series five cases are noted as having adhesions between the uterus and abdominal viscera. Though the number is not very great, the frequent impossibility of diagnosing the presence of adhesions before operation greatly increases their importance.

Retention of Urine.

Seven patients, all about or past the menopause, were operated upon for this condition alone. In each case the uterine fibroid filled the pelvis, and had been allowed to drop into this position through atrophy of the tumour due to the menopause. I cannot say how far *x* rays would have still further diminished the size of the tumours and relieved the symptoms, but their application would have taken some little time, and have necessitated catheter treatment in the meantime. We must also bear in mind the action of radiation upon larger tumours, as the atrophy set up by this treatment may cause a fibroid situated above the brim to descend into the pelvis and set up acute symptoms.

Wrong Diagnosis.

Every gynaecologist knows the difficulty of making a correct diagnosis in these cases of pelvic tumour. This is recognized by the radiologists who have published their work up to this time, and the majority insist upon the necessity of an examination by a gynaecologist before *x*-ray treatment. I doubt whether this will be so in future. Even if a gynaecologist is consulted the risk is not entirely eliminated, and I have to confess to two bad mistakes made during the last two months. In both cases I diagnosed uterine fibroids, and fortunately advised operation, and in both cases the solid tumour proved to be carcinoma of the ovary. In both cases the tumour was not adherent and was removed, so that the patients have a very fair chance of being cured, which they would not have had with *x*-ray treatment.

Conclusions.

1. Small fibroids, not larger than an orange, which are not producing any symptoms may be left alone, but the patient should be kept under observation, as there is a possibility before the menopause of the tumour causing increased haemorrhage or increasing in size, and after the menopause of becoming malignant.

2. If the patient is very anaemic the tumour should be treated by radiation to stop the haemorrhage and allow her general health to improve, but the tumour should be removed later.

3. In all other cases the tumour should be removed by hysterectomy or myomectomy—myomectomy being preferred for women in the child-bearing period who desire a family and when a useful uterus can be left, panhysterectomy for cases with a badly lacerated cervix in addition to the fibroid, and supravaginal hysterectomy for the remainder.

REFERENCES.

[1]Arthur E. Giles: Indications for and Results of Myomectomy for Uterine Fibroids, *Proc. Roy. Soc. Med.*, Section of Obstetrics and Gynaecology, 1922, p. 13. [2]Victor Bonney: Scope and Technique of Myomectomy, *Journ. of Obstet. and Gyn. of the British Empire*, vol. xxix, No. 4.

The Oliver-Sharpey Lectures

ON

THE ACTIVITY OF THE CAPILLARY BLOOD VESSELS,

AND ITS RELATION TO CERTAIN FORMS OF TOXAEMIA.

DELIVERED BEFORE

THE ROYAL COLLEGE OF PHYSICIANS OF LONDON

BY

H. H. DALE, M.D., F.R.C.P., F.R.S.,

HEAD OF THE DEPARTMENT OF BIOCHEMISTRY AND PHARMACOLOGY UNDER THE MEDICAL RESEARCH COUNCIL.

LECTURE II.

BEFORE we pass to some of the pathological applications of the knowledge now available concerning the active contractility and tone of the capillary blood vessels, there are a few additional points concerning its normal physiological significance which ought to be passed in review. Professor Richards of Philadelphia has found it possible by means of special lighting arrangements to see the capillaries between the tubules and in the glomeruli of the living frog's

kidney.[1] Dr. Leonard Hill[2] has independently, and for a somewhat different purpose, made observations on the same object. Richards and Wearn have noted the highly active contractile function of the glomerular tufts, some shrinking to small compass while others, previously shrunken, expand so as almost to fill Bowman's capsule. The fact which I have already emphasized, of the varying permeability of the capillary endothelium, with changes in tone of the supporting, contractile cells of Rouget, must surely have some bearing on these pronounced variations of tone in the capillaries of the kidney; but its exact significance remains to be explored.

Since Gaskell's[3] work on the regulation of the blood supply to skeletal muscle the association of vaso-dilatation with functional activity has been clearly known. The work of Chauveau and Kauffmann[4] on the masticatory muscles of the horse demonstrated the same phenomenon. Until recently, however, this dilatation was assumed to concern the arteries alone, and the chief matter of discussion was the relative importance in its production of nervous impulses and of the chemical stimulus of metabolic products. As we have already seen, there can be no doubt now as to the important part played, in this adjustment of blood supply to metabolic requirement, by intrinsic relaxation of the capillaries, or as to the control of the tone of these vessels by nervous impulses. When we come to the question of chemical control the evidence is not yet so clear. On the one hand, it is obvious that the capillaries, with their intimate relation to and constant chemical interchange with the tissues, must be specially exposed to any influence on vascular tonus which the products of metabolism may exert. On the other hand, the particular product of metabolism, carbon dioxide, which, since Gaskell's[5] experiments again, and as the result of repeated confirmation of his results (Bayliss,[6] Hooker,[7] Anrep[8]), has been credited with a potent vaso-dilator action, has not been demonstrated to have a pronounced effect on capillary tonus. Krogh,[9] indeed, as the result of recent experiments, comes to the conclusion that such acidity, due to increased tension of carbon dioxide, as can occur during life, "probably plays no part whatever as a regulator of the capillary circulation." Yet, since the time of Roy and Graham Brown[10] it has been obvious that capillary tone is powerfully depressed by some product of cellular action, which accumulates during brief stoppage of the circulation, so that the capillaries dilate widely when the blood is readmitted, and is formed with abnormal rapidity if the tissue is injured. What can such a product be? It will, I think, be quite obvious, from what I said in the last lecture, that a substance having the histamine type of action would fill the requirements; and the tendency to speculate in this direction is reinforced by the observation that a simple watery extract of almost any tissue in the body contains a substance, or substances, producing this type of effect. At the same time, in the absence of direct chemical evidence—which, it must be admitted, is practically beyond hope of attainment with methods yet available—I think that there is no warrant for the assumption which some have been ready to make, that small quantities of histamine are actually formed in metabolism.

In somewhat closer contact with experimental reality is the evidence as to the factors, other than nervous impulses, concerned in the maintenance of the normal, average tone of the capillaries. You will remember that Richards and I found that the presence of a small proportion of adrenaline in the perfused blood was necessary, in order to enable us to demonstrate the vaso-dilator effect of histamine with an artificial circulation. This suggested to us that a normal function of adrenaline, as continuously secreted into the blood in minute quantities, was the maintenance of a healthy capillary tonus against the dilator effect of metabolic products. The view was supported by an observation of my own,[11] that a cat which has been deprived of its suprarenal glands becomes extraordinarily sensitive to the shock-like effect of histamine, being killed by an injection which, in the normal animal, would produce only an evanescent, vaso-dilator fall of the arterial pressure. My former colleague, Dr. Kellaway, and Dr. Cowell[12] have confirmed this observation, and have given it much greater precision, in studying the effect, on the reaction to histamine, of destroying the medulla of the suprarenal glands in cats, leaving sufficient intact cortex to enable the animals to survive, and to keep in most ways healthy, for weeks or months. They observed in such cats the effects of injecting, into the ear vein, a small dose of histamine, such as in a normal cat produces barely perceptible symptoms, with at most a slight evanescent rise in the corpuscular content, due to temporary loss of plasma from the circulation. In cats lacking the suprarenal medulla such injections of histamine caused pronounced collapse and long persistent rise of the corpuscular content of the blood. But such cats could be rendered for the time being normal, in their response to histamine, by preliminary treatment with hypodermic injections of adrenaline.

There is evidence, then, at least of an antagonism to, or a moderating influence on, the reaction of the capillaries to histamine, produced by the presence of adrenaline in the blood, in such concentrations as do not perceptibly influence the arterial blood pressure. The fact that in many animals the capillaries are under motor control from sympathetic nerves would lead to an expectation of such a tonic influence of adrenaline. Direct evidence, on the other hand, points rather to another hormone as concerned with the chemical maintenance of capillary tone. Krogh and Harrop,[13] in their perfusion experiments on the frog's leg, found evidence of the presence of some substance, not adrenaline, in mammalian blood serum, the presence of which maintained a good tone and normal permeability of the capillaries, while in its absence they became dilated and allowed the escape of fluid into the tissues. Krogh and Rehberg[14] have demonstrated a suggestive similarity, in several properties, between this diffusible substance in serum and an active constituent of the posterior lobe of the pituitary body. They resemble one another in stability, in their solubilities, their diffusion through membranes, and, apart from their tonic action on capillaries, in both showing the dilator action on the melanophores of the frog's skin, which Hogben[15] first observed with the pituitary extract. Finally, it should be noted that Pohle[16] had previously shown that removal of the pituitary gland in frogs was followed by cutaneous oedema. I do not think that the evidence for identification of the substance in serum with the pituitary extract is complete. In view, moreover, of the very wide differences exhibited by the capillaries of different species in their reaction to histamine and other substances, I think that Krogh is wise in deprecating a hasty assumption that all capillaries, in all species, are dependent for the maintenance of normal tone on the presence of traces of the pituitary hormone in the blood. This question of the relation of hormones to the functional condition of the capillaries is, indeed, only just being opened; and it is at least of interest to note that, in the case of both the endocrine glands which have yet been investigated in this connexion, the suprarenal and the pituitary gland, a presumption is already established in favour of their normally exercising an important influence on capillary tonus.

There is an intimate connexion between this question of hormonal control and some puzzling, but highly significant, observations recently made and published by my colleague Dr. Burn.[17] His observations were primarily directed to an entirely different question—that of the relation between the response of the sweat glands to pilocarpine and the integrity of their nerve supply. He found that degeneration of the secretory nerve fibres to the sweat glands of a cat's foot, produced by post-ganglionic section of the sympathetic fibres to the limb, in no wise impaired the sweating caused by pilocarpine. When, on the contrary, the whole of the mixed nerves to the foot were cut, so that sensory as well as sympathetic fibres were divided and degenerated, sooner or later the effect of pilocarpine on the sweat glands of that foot was, in the majority of cases, greatly reduced or obliterated. This was not due to the disappearance of other secretory fibres to the sweat glands, since it was clearly proved that none but those from the sympathetic system exist. A close association, however, was detected between the response of the sweat glands to pilocarpine and the dilator response of the capillaries in the same limb to histamine. When, as after degeneration of the sympathetic fibres only, the sweating response to pilocarpine was

maintained or exaggerated, the dilator response of the vessels to histamine was abnormally pronounced. When, after section of the whole nerve supply, the sweating produced by pilocarpine was reduced or suppressed, the dilator reaction to histamine had disappeared, although the arterial dilator reaction to acetyl-choline was produced as usual. I do not think that the meaning of this change in the capillary reaction, corresponding with the failure of the gland cells to respond to pilocarpine, is yet clear. Burn, adopting a line of argument which Richards and I had used, is inclined to ascribe it to loss of the normal tone of the capillaries. I do not think there is evidence, from the appearance of the skin, that the capillaries are abnormally relaxed. What Burn's results clearly show is that they have lost their normal responsiveness to histamine, and his further experiments bring out the very important point, that the dilator reaction to histamine can be restored, and with it the response of the sweat glands to pilocarpine, if the cat is treated for a few days with daily hypodermic injections of adrenaline. Again, therefore, we have suggestive evidence of an association between a high content of adrenaline in the blood and a satisfactory tone or responsiveness of capillaries, in this case of capillaries deprived of their normal nerve supply. The simultaneous loss of the normal response of the sweat glands, and its restitution by adrenaline, are probably, therefore, to be ascribed to varying states of nutrition of their cells; and this suggestion is confirmed by Burn's further and highly significant observation, that the loss of the dilator reaction to histamine is associated, not only with this depressed response of the sweat glands, but with a generally impaired vitality of the skin of the whole foot. Wherever this is exposed to pressure or friction in walking, the hair is lost, the skin becomes oedematous and loses its normal flexibility, and there is a tendency to ulceration. With the recovery of the reaction to histamine, under the influence of slowly absorbed doses of adrenaline, this malnutrition of the denervated skin disappears, and any ulceration begins to show signs of healing.

This obviously opens up very important questions as to the nature of the trophic changes in the skin following nerve lesions, and particularly of lesions involving the sensory fibres, with their function in relation to vaso-dilator reactions. The case of tabes dorsalis naturally suggests itself, and I believe there are many such conditions in which a systematic investigation of the capillary response to mechanical and chemical stimuli would be highly instructive. The naked skin of the human subject is far more suited to this type of investigation than that of any of the hairy animals usually available for laboratory experiment. The readiness with which the skin capillaries of the normal man react to histamine has been amply demonstrated by Eppinger,[18] and by Sollmann and Pilcher,[19] the latter observers recording the appearance of a capillary flush, followed by an oedematous wheal, when histamine was applied to the very lightly scarified skin, in dilutions as high as one part in 10,000. The modification of this type of reaction by defective innervation of the skin lies open to study, which could not fail, I think, to give instructive results.

There must, I suppose, be some kind of relation between this loss of dilator response, studied by Burn, and the failure of the inflammatory reaction to local irritation, demonstrated some years ago in Hans Meyer's laboratory by Ninian Bruce.[20] Bruce found that the inflammatory hyperaemia and oedema of the conjunctiva, following the application of mustard oil to the eye of a rabbit, was not perceptibly modified by previous section of the roots of the Gasserian ganglion. When the trigeminal nerve was cut peripherally to the ganglion there was no immediate modification of the inflammatory response, but, when time was allowed for degeneration of the sensory fibres with their terminal branchings, the inflammatory reaction to mustard oil was practically abolished. The same depressant effect on the inflammatory response was produced by local anaesthetics. Clearly, then, the reaction was not a central reflex; it persisted without impairment after the connexion with the brain had been broken, but could be abolished by peripheral sensory paralysis, with the central connexion intact. Bruce argued that it must be due to a peripheral reflex of the axon type, through a branching of the sensory fibre to sensory endings, on the one hand, and to the blood vessels on the other, as Bayliss[21] had previously suggested in explanation of the vaso-dilator effect of peripheral stimulation of sensory fibres—the so-called antidromic vaso-dilatation.

Bruce's results were confirmed by Bardy,[22] who only differed from Bruce in that he found that the inflammatory reaction was reduced to small proportions, not altogether abolished, by degeneration or peripheral paralysis of the sensory nerve fibres. Breslauer[23] has more recently found that even the local inflammatory reaction to mustard oil of the human skin fails to appear if the sensory nerves to the area are degenerated, or paralysed by a local anaesthetic. At the time when Bruce and Bardy's observations were published the arteries were still regarded as the only part of the vascular system presenting variations of tone having any significance. Arterial dilatation is, doubtless, a factor of importance in typical inflammation, but it can hardly be doubted, I think, that that of the capillaries is more important still. It is very questionable whether arterial dilatation alone, without relaxation of the capillaries, could produce a condition at all like that seen in inflammation. Axon reflexes to the capillaries are probably at least as important as those acting on the arteries.

In addition to this nervous action we have to take into account a chemical stimulation of the capillaries to dilatation; and this may appear almost immediately if the substance applied has itself such an action on capillaries, or as a later, indirect effect of dilator substances set free from injured or dying tissue cells, directly attacked by the irritant. Obviously the whole reaction, taking into account all these possibilities, may be a very complex one, and in different cases one or other of the various possible factors may be predominant. The whole question of the vasomotor mechanism of inflammation needs a newer and closer analysis, in the light of knowledge, of which some is already available, and much still to be obtained. I think it can hardly be doubted, however, that the result will be to bring active changes of capillary tonus into the centre of the picture.

Discussion of local skin reactions naturally brings to mind a whole series of pathological changes, erythemata and eruptions, with which the dermatologist is familiar, and in the ultimate analysis of which a knowledge of capillary function will obviously play a principal part. I have not the time, if I had the knowledge, to enter upon a consideration of them now. I will merely point to the importance, in this connexion also, of the knowledge, newly accumulating, as to the close similarity in effect upon capillaries of appropriate nervous impulses on the one hand, and chemical stimuli on the other. Dilatation of capillaries, leading to excessive permeability and local oedema, has been experimentally demonstrated as the result of nerve stimulation, and as the result of the action of poisonous substances. There are many instances in which it may be impossible to determine which type of stimulus is at work. Even the correspondence of an eruption with the distribution of particular nerves is not absolutely decisive, if we admit the possibility that a virus or a toxin might descend from the centre to the periphery along the nerves, as the virus of rabies and the toxin of tetanus have been shown to ascend from the periphery to the nerve centres;* or if, on the other hand, we suppose that small centres of capillary dilatation, produced by nervous impulses, may provide points of lowered resistance, where a generally diffused virus can settle, or a toxin accentuate a process already initiated. I indicate such possibilities merely to lay emphasis on the wisdom of avoiding the assumption that, because a phenomenon has some obvious relation to innervation, it is of necessity wholly nervous in origin.

Such considerations lead me naturally to a group of phenomena which have been the subject of much study and discussion during recent years. At the risk of a wearisome insistence, I must recall to you again the complex of symptoms which has received its most detailed analysis in the form in which it is produced by histamine. You will

*For this interesting suggestion I am indebted to Dr. John Brownlee.

remember that it involved a simultaneous stimulation of plain muscle to contraction and of the capillaries to relaxation of their tone. We have considered the effects on the circulation, but have left out of view, up to the present, the equally striking effects produced by contraction of the plain muscle of hollow viscera, and particularly that of the bronchioles. The production of this complex by histamine might excite merely a laboratory curiosity. It becomes of practical interest when we realize that essentially the same combination of plain muscle contraction and loss of capillary tone occurs as the central feature in the action of a large class of protein poisons, and in the so-called anaphylactic shock. In different species, and under different conditions, one or the other feature of the action comes into the forefront of the picture; in the unanaesthetized guinea-pig the conspicuous feature in the action of these poisons, or in the anaphylactic shock, is the constriction of the plain muscle of the bronchioles, causing asphyxial death; in the anaesthetized dog it is relaxation of the capillaries, probably associated with constriction of the hepatic veins, leading to circulatory collapse. But with minor specific and individual variations in the incidence of its component factors, the action produced by this whole group of poisonous agents is fundamentally the same.

The application to human pathology hardly needs indication. It has frequently been discussed in recent years by those more competent than I, and the production, by the same normally or individually toxic agent, of urticaria and subcutaneous oedema in one case, and spasmodic asthma in another, will be very familiar to all of you. There was at one time a tendency, which I hope is dying, to regard the pronouncement of the word "anaphylaxis," whenever this symptom-complex was encountered, as giving absolution from further effort to analyse the condition. Such words are useful when they are used to define, and merely mischievous when they are used to shirk definition. At the same time, it must be admitted that there are points of similarity between the so-called "toxic idiopathies" seen in man, and the acquired specific sensitiveness to a foreign protein, which is properly termed anaphylaxis. I have on several previous occasions maintained, by evidence and arguments which I shall not inflict on you to-day, that the essence of the true anaphylactic condition is the location in the living cells of an antibody of the precipitin type, and that it is the intracellular reaction between this and the antigen which causes the anaphylactic reaction. In the case of the toxic idiopathies, I think it is certain that we have again a cellular sensitiveness, and we must assume that the specifically toxic agent, be it a pollen or an animal epithelium, produces in the sensitive cells changes similar to those which the anaphylactic antigen produces; but we have here but little evidence of the presence of antibodies in the strict sense. Indeed, but few of the substances responsible for these human idiosyncrasies can function experimentally as antigens, and some, such as the simple organic chemicals to which specific sensitiveness occurs—iodoform, antipyrin, etc.—certainly cannot. We cannot assume, then, that whenever a specific reaction of this type occurs an immunity process, involving the presence of an antibody, is at work. All that we can assume is that the protoplasm of an idiopathically sensitive cell has some kind of abnormality, whether due to the presence of a separable antibody or not, which causes it to react to its specific poison by the same kind of change as that with which the anaphylactic cell reacts to its specific antigen, or with which the normal cell reacts to histamine or to a naturally poisonous protein cleavage product.

For the main concern of these lectures the point of chief interest is the location of poisoning of this type, however produced, in the walls of the capillaries and in plain muscle fibres. I take this to mean that all these substances produce, either in all individuals or only in those specifically sensitive, the same kind of physical change in cell protoplasm; and that the predominance of visible response to them in the capillary cells, and in the plain muscle, is due to a special physiological sensitiveness of those structures to this type of change.

When a specific sensitiveness is produced to a normally innocuous substance, this is accompanied, apparently, by a minor degree of enhanced sensitiveness to naturally poisonous substances producing these effects, as shown in some experiments by Dr. Kellaway and myself.[23] This corresponds with the clinical experience that the victim of a toxic idiopathy has capillaries, or bronchial plain muscle, which are to some degree abnormally sensitive to naturally poisonous substances of this class. If this means an enhanced physiological reactivity to a certain type of physical change, it would not be surprising, it would even be expected, that they should also show an abnormal responsiveness to nervous impulses which produce capillary dilatation on the one hand, or constriction of the bronchi on the other. I shall not venture into a discussion of clinical details, which are beyond the scope of an experimental worker. I merely want to emphasize again the fact that there is no experimental warrant for assuming that the two kinds of causation are mutually exclusive. The detection of a neurotic factor does not exclude a toxic one, and vice versa.

I must turn now to conditions in which there is reason to suppose that the whole or a large part of the capillary blood vessels in the body are simultaneously affected by toxic agents. I have given already a brief summary of the conclusions reached, by analysis of the circulatory failure produced by large doses of histamine. Here, again, histamine was chosen simply as a conveniently accessible and accurately measurable representative of a large class of poisons. Sir William Bayliss,[24] in the Oliver-Sharpey lectures a few years ago, gave a full account of the analogous condition of circulatory failure, caused by a general loss of capillary tone, which was studied during the war under the name of secondary wound shock, and attributed to the toxic action of autolytic products from crushed and lacerated tissue. I need only mention, therefore, this special example of what I suspect to be a much larger group of toxaemias resulting in circulatory failure, in which the most serious factor is this loss of capillary tone. A large number of bacterial products exhibit this type of action, including both soluble products and substances liberated only by lysis of the bacteria. In the local, protective, inflammatory reaction to them we probably have a complex of direct dilator action on the capillary walls and reflex dilatation of arterioles through the stimulation of sensory nerve fibres. When poisons like these are formed in such quantities as to be distributed, in effective amounts, through the circulation, so that all or a large proportion of the capillaries simultaneously lose their tonus, there arises the peril of circulatory collapse due to peripheral stagnation of the blood. The most obvious and striking example of such an effect, perhaps, is the cyanotic collapse seen in cholera, where the oligaemia is accentuated by the enormous loss of fluid through the permeable intestinal capillaries. Dr. Esther Harding,[25] who carried out a series of experimental observations in my department, has found evidence of this type of circulatory failure in animals dying rapidly after large doses of diphtheria toxin, and in the early collapse occurring in severe cases of human diphtheria, without respiratory obstruction, and before the toxin had affected the heart muscle. Many years ago Romberg and Pässler[26] put forward the view that the so-called heart failure in septicaemia was not due to defect of the muscular activity of the heart, but to a vasomotor collapse. With the knowledge then available they attributed the result to failure of the vasomotor centre, but, in the light of present knowledge, a direct impairment of capillary tonus suggests itself as a much more probable and sufficient cause of such a condition. Recently Olivecrova[27] has examined this possibility in experimental peritonitis and given definite evidence in favour of a loss of capillary tone as the principal cause of the circulatory defect and of the fatal issue. I believe that the same possibility is well worthy of consideration in the case of all types of acute septicaemia. The condition may be obscured by concomitant poisoning of the heart muscle, but its recognition must have an important influence on scientific treatment. It is obviously useless to stimulate a poisoned and labouring heart if the main cause of its inefficiency is not the weakness of its muscular action, but the failing return of blood by the systemic veins.

One could continue to multiply examples of conditions in which this dangerous complex may arise. Apart from agents directly toxic in themselves, the position is complicated by the fact that, when blood is subjected to injurious influences, as by contact with otherwise inert substances acting as "foreign" surfaces, so that processes are initiated in it which, outside the body, would lead to clotting, it acquires a toxicity of this type. (*Cf.* Novy and De Kruif,[29] Dale and Kellaway.[23])

When you also remember that, apart from dilatation and increase of permeability of the capillaries due to loss of their contractile tone, effects at least superficially similar can probably be produced by substances which directly poison the endothelial wall and disorganize its delicate structure, it will be obvious that there may be difficulty in deciding as to the precise nature of a particular effect. Salvarsan, for example, as an arsenical derivative, may, and in some cases probably does, act as a direct endothelial poison. It is also a colloidal substance which, on injection, may be so precipitated in the blood as to initiate precoagulation changes. Both types of effect probably figure among the toxic effects which salvarsan occasionally produces.

Unfortunately methods of dealing effectively with dilated and permeable capillaries are not easy to find. The action of adrenaline, above mentioned, suggests itself; and there are cases in which it seems to have value. As a prophylactic or a remedy for the immediate, so-called vasomotor, reaction sometimes produced by salvarsan, for example, there seems to be no room for doubt that adrenaline is effective; and its effectiveness supports the suggestion, made on other grounds, that this type of reaction is due to capillary dilatation caused by precoagulation changes in the blood, and not to poisoning of the endothelium. Calcium has had a reputation for reducing the tendency to excessive permeability of the capillary walls. Krogh's recent evidence as to the tonic action of pituitary extract should find some therapeutic application. Experience during the war, however, presented as practically insoluble the problem of restoring the volume of blood in effective currency when once the capillaries had become thoroughly lax and permeable. Saline solutions, gum saline, or even blood itself, often produced but a temporary recovery of volume, the fluid escaping from the vessels, or becoming removed from circulation, almost as fast as it was infused into the veins. In some of Dr. Harding's experiments, in the investigation already mentioned, there could be seen what appeared to be a secondary, and rapidly fatal, accentuation of the toxic collapse, when blood which had lain stagnant in toxaemically dilated capillaries was washed back into circulation by an infusion. The therapeutic problem is a peculiarly difficult and complex one; but the first step towards its rational solution is a clear recognition of the nature of the condition calling for treatment.

REFERENCES.

[1] Richards: *Amer. Journ. Med. Sci.*, 163, p. 1, 1922.
[2] L. Hill and McQueen: *Brit. Journ. Exp. Path.*, 2, p. 205, 1921.
[3] Gaskell: *Ludwig's Arb.*, 11, p. 45, 1876; *Journ. of Anat. and Physiol.*, 11, pp. 360 and 720, 1877; *Journ. of Physiol.*, 1, p. 262, 1878.
[4] Chauveau and Kauffmann: *Comptes Rendus*, 104, p. 1126, 1887.
[5] Gaskell: *Journ. of Physiol.*, 3, p. 48, 1880.
[6] Bayliss: *Journ. of Physiol.*, 26, Proc. Phys. Soc., p. xxxii, 1901.
[7] Hooker: *Amer. Journ. of Physiol.*, 31, p. 47, 1912.
[8] Anrep: *Journ. of Physiol.*, 45, p. 318, 1912.
[9] Krogh: *The Anat. and Physiol. of Capillaries*, p. 131.
[10] Roy and Graham Brown: *Journ. of Physiol.*, 2, p. 323, 1879.
[11] Dale: *Brit. Journ. of Exp. Pathol.*, 1, p. 103, 1920.
[12] Kellaway and Cowell: *Journ. of Physiol.*, 57, p. 82, 1922.
[13] Krogh and Harrop: *Journ. of Physiol.*, 54, Proc. Phys. Soc., p. cxxv, 1921.
[14] Krogh: *The Anat. and Physiol. of Capillaries*, pp. 156-167.
[15] Hogben: *Proc. Roy. Soc.*, B, 93, p. 318, 1912.
[16] Pohle: *Pflüger's Arch.*, 182, p. 215, 1920.
[17] Burn: *Journ. of Physiol.*, 56, p. 232, 1922.
[18] Eppinger: *Wien. med. Woch.*, 23, p. 1414, 1913.
[19] Sollmann and Pilcher: *Journ. of Pharmacol. and Exp. Therap.*, 9, p. 309, 1917.
[20] Bruce: *Arch. f. exp. Path. u. Pharm.*, 63, p. 424, 1910.
[21] Bayliss: *Journ. of Physiol.*, 28, p. 220, 1902.
[22] Bardy: *Skand. Arch. f. Physiol.*, 32, p. 198, 1918.
[23] Dale and Kellaway: *Phil. Trans.*, B. 211, p. 273, 1922.
[24] Bayliss: *Intravenous Injection in Wound Shock*, London, 1918.
[25] Harding: *Lancet*, 1921, i, p. 737.
[26] Romberg and Pässler: *Deut. Arch. f. klin. Med.*, 64, p. 652, 1899.
[27] Olivecrova: *Acta Chirurg. Scand.*, 54, 1922.
[28] Breslauer: *Deut. Zeit. f. Chirurg.*, 150, p. 50, 1919.
[29] Novy and De Kruif: *Journ. of Infect. Dis.*, 20, p. 536, 1917.

ENDOCRINES, VITAMINS, AND SUBTLETIES.

ABSTRACT OF AN ADDRESS DELIVERED TO THE SUNDERLAND DIVISION OF THE BRITISH MEDICAL ASSOCIATION

BY

LEONARD WILLIAMS, M.D.

IN no branch of knowledge is it more difficult, certainly in none is it more necessary, than in ours, to get the spirit of the moment into its right perspective. Between the excited welcome accorded to new therapeutic methods on the one hand, and the obstinate impermeability to fresh ideas on the other, the plain man is apt to be bewildered, and it is well that he should occasionally pause to consider on what sort of ground he is standing and whither the pathway seems to be leading. It is with the hope of affording some help in this direction that I have prepared this paper, and such must be my excuse for the very comprehensive title.

I.

In the matter of the first subject, endocrinology, I would like to emphasize at the outset the important fact of the interdependence of the glands which constitute the system. I am fond of comparing them to the eight rowers in an outrigged boat, with the central nervous system as cox. These rowers are all pulling in the same direction; they are, nevertheless, some of them, pulling one against the other. Now, in our clinical dealings with these glands we are much too apt to regard each as an independent entity, instead, as we ought, of considering each as a member of a hierarchy, the whole of which is liable to be deranged when one of the members is seriously affected. As bearing on this generalization, let me indulge in another. It is the evil fashion to speak of "hyper" or "hypo" functioning of certain glands. Such a nomenclature expresses but a part of the truth, and that part a very misleading one. It is no doubt true that in the various degrees of myxoedema, for example, the thyroid is primarily at fault, but the outstanding symptom which brings the patient to the doctor may point insistently to failure of some other gland.

Quite recently a man of 45 came to me complaining of sexual impotence gradually acquired. He turned out to be a case of mild, atypical myxoedema, appropriate treatment for which rapidly restored his sexual capacity. It also restored his domestic peace, which had been seriously impaired by unfounded charges of infidelity.

Now, misleading as it generally is to speak of underaction of a particular gland, it is much more misleading—it is, indeed, generally a misstatement—to speak of overaction of any single gland.

Let us take the thyroid again. It has become a habit with many, who ought by now to know better, to speak of Graves's disease as synonymous with hyperthyroidism. Now, although the thyroid gland may be overactive in Graves's disease, it is so in common with other glands, notably the suprarenal, the pancreas, and the thymus, and the salient symptoms of the disease are due much more to the latter than they are to the thyroid, which, as you know, is frequently not even enlarged. Whatever else it is, or is not, Graves's disease is not a pure hyperthyroidism.

In the matter of underaction it is generally evident that one gland is primarily at fault; in the matter of overaction that is seldom the case, except where there is a definite and local organic irritant, such, for example, as suprarenal and pituitary tumours. The cause of overaction is generally a toxaemia which irritates not one gland only, but many, though in different degrees. In looking for a cause of underaction it is always well to remember the possibility of long-continued toxaemic overaction, leading to exhaustion of the gland or glands in question. This is a frequent cause of thyroid insufficiency, because the thyroid above all others is concerned in combating endogenous toxins. That it is a cause of pituitary insufficiency I hope to show presently. Then again we must always bear in mind that when we have given, say, thyroid extract with success, our good results do not necessarily mean that the patient was lacking in thyroid essence. The good results may mean, and in many cases

I am sure they do mean, that the extract has stimulated an opponent gland—say the suprarenal or the pancreas—to increased effort. So that in giving the extract we are not supporting a flagging thyroid, we are rousing a lazy suprarenal. We are, in fact, restoring the balance by indirect means.

With these preliminary reservations we can proceed to consider a few of the glands individually. First, then, as to the thyroid. Here we are entitled to speak of a primary insufficiency. We know that there are many clinical manifestations of this condition; such are the troubles in the skin and its appendages, the slow pulse, the sensitiveness to cold, the muscular fatigue, the mental hebetude, the intestinal stasis, the menstrual disturbances, and in children night terrors and nocturnal enuresis. Hertoghe, of Antwerp, long ago pointed out that these and other symptoms might all be reduced to a causal common denominator which is expressed by the word "infiltration." The thyroid is the great activator of metabolism, and when the fires burn too slowly material is deposited in various tissues. We may call this material mucin if we like; its name is less important than the fact that it is a product of inadequate metabolism which is liable to be deposited, capriciously so far as we can see, in any tissue or system, thus giving rise to very diverse findings. Just as a person with a high blood pressure may bleed from anywhere, so a person with thyroid insufficiency may become infiltrated anywhere. The selection of the site of the infiltration is even more difficult of explanation than the selection of the site of the haemorrhage. And when we consider the matter, it is not difficult to realize that a very slight degree of infiltration may bring about serious results. A slightly infiltrated endocardium, an infiltrated intestinal mucosa, an infiltrated endometrium, may very easily produce a train of symptoms sorely baffling to the clinician who fails to remember slight thyroid insufficiency and its powers of depositing unwelcome material in unsuspected and unlikely places. With this general outline in view, it is possible to form a mental picture of the method of production of almost any of the many morbid manifestations which we have come to associate with thyroid inadequacy, but in so doing we must be careful not to forget the possible responsibility of other glands for some, at any rate, of the details of the complete picture. Of the thyroid, more than of any of its congeners, it may be asserted that when it fails to ring true, the others inevitably become jangled and out of tune. It is the leader of the glandular orchestra.

This statement, correct though I believe it to be, seems less so to-day than it used to seem. Some years ago it was thought that the parathyroids were mere accessory or supplementary or immature thyroids, and commercial manufacturers of thyroid extract included in the product thus labelled, not only the thyroid gland itself, but the embedded parathyroids. Since it became evident that the old view was incorrect and that the parathyroids were possessed of functions distinct from, and according to some observers even antagonistic to, the thyroid proper, manufacturers have been careful to separate these glandlets from the thyroid itself, with the result that when we now prescribe thyroid extract we are exhibiting the pure article, whereas in former days we used to exhibit thyroid *plus* parathyroid. This is liable to make a serious difference in our results, and when I now fail with thyroid where I confidently expected to succeed, I generally find that the addition of a small dose of parathyroid—say one-twentieth of a grain—brings about the desired result. There are, of course, still those who deny to the parathyroids any particular part in the endocrine hierarchy. In spite of these, however, clinicians have satisfied themselves that the extract of these despised glandlets, when orally administered, does bring about very satisfactory results in certain cases. Their action may be summed up by saying that they have a very favourable influence upon calcium metabolism and on certain conditions of autointoxication; for these glands would seem to have a very definite part to play in the defensive mechanism with which the endocrine system as a whole is endowed. Clinically, parathyroid medication has been found to be exceedingly helpful in the treatment of benign ulcers, both internal and external—that is, gastric and duodenal and varicose ulcers. It is certainly very useful in tetany and in that condition of chronic toxaemia which has been called latent tetany.[1] Its use in Parkinson's disease may or may not be attended with good results. If it fails to do good in rickets the cause is to be sought in want of skill in guiding the necessary concomitants such as diet, air, sunshine, and the like. The unsightly and painful chilblain will more often than not yield to parathyroid medication where other remedies have failed.

I have said that in looking for a cause of underaction in any gland it is well to remember the possibility of long-continued toxaemic overaction leading to exhaustion of the gland in question. Let me take an illustration from the pituitary, and in so doing say at once that the chronic overaction may own causes other than toxaemia.

There are a fair number of people going about who are so much taller than the normal as to give rise to a suggestion of giantism, men of over 6 ft. 2 in., and women of 5 ft. 10 in. To careful examination a certain number of these people will reveal present evidences not of pituitary excess but of pituitary insufficiency. They have grown rapidly, outgrown their strength as the saying is, in response to an irritated pituitary. At a given moment the relative pituitary hyperactivity dies down, to be followed by the relative insufficiency of exhaustion, and, although the balance may ultimately become redressed in some degree, that person's pituitary is always lacking in vigour, and without outside help will generally give rise to unpleasant symptoms. The preliminary excess is to be seen in the abnormal height, the spaced incisor teeth, the large hands, and the misshapen lower jaw, which is either receding or underhung, according to the age at which the pituitary excess began to die down. The existing insufficiency is evidenced by intolerance of extremes of temperature, by late oncoming, irregular and painful menstruation, by absence of half-moons on the nails and other irregularities of pigmentation, especially little black moles, "beauty spots," dotted about the body. These people are as a rule mildly but definitely undersexed, and tend to become obese on and below the waist line. But it is not any of these things which brings them for advice. They come under our notice for indefinable departures from health—headaches, asthenia, lethargy, and the various symptoms which are classified as neurasthenia. They are fortunate if they escape the stuffing of the Strasbourg goose type and the spanking of the anecdotal and too familiar masseuse. In any case they will obtain no real relief until someone recognizes in them the stigmata of their pituitary debauch. Into the various causes of the preliminary pituitary excess it is not possible to enter here. I have already referred to the most important—namely, toxaemia, which is nearly always of intestinal origin, and I shall attempt to show presently that its correction is purely a matter of rational dietetics.

The interrelationship between all the glands of the endocrine system, which it is always so necessary to bear in mind, is nowhere better exemplified than in the association which they all seem to have with the organs of generation—the gonads, as they are conveniently called. Both in the male and in the female the gonads have been shown to have very intimate relationships with the thyroid, the pituitary, the suprarenals, the thymus, and the pineal. Indeed, when one comes to consider each gland separately, its importance, its alliances and ramifications, one is inclined to claim for each in turn the title of leader of the orchestra which I have applied to the thyroid. One is reminded of those detective stories in which the reader is led to believe that each character in turn is surely the real culprit. In the play of the endocrines I am as a rule firmly convinced that the thyroid is the "star turn," but whenever I contemplate the responsibilities of the gonads, this conviction weakens. The ancients who worshipped the phallus as the origin of life were animated by a sound if savage instinct; for latter-day science has taught us that the secretions of the testes come very near to fulfilling that claim.

The researches of Voronoff in testicular grafting,[2] which I have followed with the closest interest,[3] prove to my mind quite conclusively that the internal secretion of the male gonad can accomplish miracles beside which those achieved by thyroid extract in myxoedema pale into insignificance. It has been the fate of most of us to meet with completely negative results from the administration of testicular and ovarian extracts by the mouth, and some people have been moved by these failures to push the negation to the point of denying to the gonads in both sexes any really active internal secretion. Voronoff's researches have taught us this clinically important fact: that though quite inert when administered orally, presumably from destruction of the hormones in the intestinal tract, the internal secretion of the male gonads is extraordinarily active when applied in the form of grafts. These grafts must, however, be applied scientifically to situations in the human body where experience has shown they may be expected to survive.

And when they do survive, their beneficial effects are exercised by no means exclusively, nor even predominantly, upon the sexual capacity, but are displayed to an even greater extent in the muscular and mental and even arterial rejuvenescence of the patient. This chapter in endocrinology is only just opening, but when Voronoff's work has been freed from the salacious wrappings in which the lay press has so far concealed its scientific value, the activities and potentialities of the testicular hormone will go far to justify the primitive adulation lavished by the ancients upon the phallic emblem. The testicular hormone effects rejuvenation and prolongs life. There is here no question of putting new wine into old bottles, because Voronoff's results strongly suggest that the bottles themselves—the blood vessels—partake in the general rejuvenation, and he believes that the application of his methods will eventually result in prolonging the ordinary span of life to 100 or 120 years.

II.

An inquiry as to why it is that man so conspicuously fails to attain to anything reasonably approaching such an age as 120 brings me to the second item on my programme—the question of vitamins.

There is an old and ugly saying that man digs his grave with his teeth—a very general recognition of the truth of which has impelled medical men for over a hundred years to dabble in the question of diet. Until recently the researches were directed to the discovery of substances in the dietary of civilized man which were responsible for the obviously detrimental effects upon his health. Haig indicted uric acid; Hare accused carbohydrates; other persons have arraigned other substances. The discovery of the vitamins has completely changed all this. It has shown that the real villain in the piece was not an intruder, but an absentee. Food is now seen to be harmful, not from what it embodies, but from what it lacks, and research workers are diligently dissecting the absentee so as to show us his component parts. Now I have no word to say against these researches, still less against the researchers. Nevertheless, I claim that this work, so far as we are concerned for the moment, is purely academic, and that attempts to utilize it in practice are liable to produce a false perspective. Our knowledge of these elusive vitamins is still very meagre. For a long time we admitted three only, as generally necessary to salvation; recently a fourth has been added, and it is as certain as anything can be that there are more to come. For the present, then, we must treat them as a whole, just as we should try and treat endocrines as a whole; for their various members are probably just as interdependent as the various ductless glands. To individualize them, as is now being done, is academically interesting no doubt; but it is dangerous. It is at least possible, it is even very probable, that they only attain to their maximum effect in the presence of one another; that there is in fact a vitamin balance which is just as important to the economy as an endocrine balance. We must therefore so frame our dietaries as to secure the inclusion not only of those already labelled, but also of those which still await isolation. In order to do this we must go back to first principles and ask ourselves what these vitamins really are. The answer is that vitamins are substances which are essential to growth, development, and the maintenance of health, which exist abundantly in raw foods and are relatively absent from cooked foods.

It has been the unfortunate fashion among some of the research workers to try and estimate the minimum amount of each known vitamin which will satisfy the demands of the economy. Now, what we want to arrive at is not the minimum, but the optimum, and I think the optimum in this case will ultimately be found very nearly to coincide with the maximum. Let me remind you that man is the only animal which is unable intuitively to select suitable food. It is obvious that he must at one time have possessed that power, and equally obvious that he lost it through the cooking stove. Whether or not Charles Lamb's *jeu d'esprit* concerning the origin of roast pork represents the real beginnings of cookery I cannot say. In any case it is certain that cookery is an art which, gaining on us gradually through the ages, has long since reached the point of overwhelming us. It is no longer our servant; it is now our tyrannical master. We think and speak and act as though all foods ought to be, must be, and shall be cooked. Cookery has permeated every class in the community, not only as a practice, but as an article of faith, and has unfortunately succeeded in dragging the medical profession at the tail of its triumphal car. Now if we are to profit by the advent of the vitamins we must modify this attitude, rearrange our outlook, and abjure this molten image. Cooked foods must be placed in the same category with alcoholic drinks—that is, they must be classed as luxuries, moderate indulgence in which is not only permissible, but often even praiseworthy.

Our real foods, that is the foods which are proper to us, are those with which Nature has provided us—namely, raw foods, dairy produce, and uncooked fruits and uncooked vegetables. These should constitute the foundations of our dietetic edifice, our altar, on which the individual may offer up any burnt sacrifice of sheep and oxen, birds and little fishes, which fashion or taste may direct. Up to the present it has been our practice, and for many of us it will remain so until we die, incontinently to forbid our patients to eat raw foods in any form, with the result that we are just as far from the successful treatment of certain general or diathetic diseases, such as gout, rheumatism, and other forms of arthritis, as we have ever been. These maladies rank high amongst the so-called deficiency diseases—diseases, that is, which are directly due to an inadequate supply of vitamins to the economy. Nor do they by any means rank alone. I have satisfied others, and more than satisfied myself, that most of the troubles of the endocrine system are due to a similar deficiency and that hormone medication seldom or never produces its best results unless it is accompanied by an abundant supply of vitaminous foods.

It may be said that vitamins are to the endocrines what the endocrines are to the economy. But it is by no means in the relatively recondite department of endocrinology that you may confidently expect to reap rewards from insisting upon a plentiful supply of vitamins. In this direction the daily round, the common task, will furnish all you need to ask. Let me give two examples.

Arbuthnot Lane has rightly attributed all manner of minor maladies, to say nothing of major, to chronic intestinal stasis. Now anyone who is afflicted with this almost universal disability may very easily convince himself that simple stasis is due directly to vitamin deficiency. I could quote several cases of people who for years—in one case it was as many as thirty years—had never dared to go to bed without taking 2 grains of cascara or its equivalent, since taking to what may be called an intensive vitamin dietary, succeed daily, regularly, and royally in relieving their bowels without any assistance whatever. And there is another feature in this situation, which is supplied by the fact that although such a person never is constipated, he is above all others the one who can afford to be, for stasis in his case does not mean the lethal process of putrefaction; it means the benign function of fermentation. The *Bacillus coli* is like ourselves, he changes his character according to his diet. When stuffed with devitalized flesh foods he becomes quarrelsome and poisons his host, but when fed on live carbohydrates which are enabled by a rational dietary to reach him in an insoluble envelope of cellulose, he becomes lamblike and assists his host in disposing of enemies. The rational outcome, then, of Arbuthnot Lane's teaching is not so much laparotomy as rational dietetics. If the latter is followed out, the former becomes unnecessary.

My other instance refers to the fierce and fantastic fashion of the wholesale extraction of teeth whenever the gums are found to be disordered. The word "pyorrhoea" has become the plaything of the profession and the bane of the public. It ought to be neither, and will not be as soon as it is generally recognized that pyorrhoea is secondary to intestinal stasis, and that intestinal stasis, when it is not structural, is permanently curable by a vitaminous dietary. Several people, mostly youngish women with seemingly good teeth, have come to me asking what they might do to be saved from the dental forceps with which they had been threatened, and all of those who consented to play the dietetic part of Nebuchadnezzar are still wearing the denture with which Nature provided them, surrounded and supported by perfectly healthy gums. Whether the vitamins have any directly beneficial effect upon the gums themselves I cannot say; but I should think it highly probable. They are certainly very powerful in preventing the deposit of tartar.

III.

There are many subtleties of a biological nature which I would have liked to touch upon, such as climate and environment generally, and their influence upon the physical make-up of individuals and races. But I must confine myself to one or two questions, fraught with difficulties and subtleties, which are forcing themselves upon our attention with ever-increasing insistence.

Of psychology we have heard a great deal during the last ten years. Much of what we have heard has been very illuminating and very helpful, but a great deal of it appears to some of us to be the purest balderdash. In an honest endeavour to sift the wheat from the chaff I have been struck with the responsibilities which have been fastened upon the unconscious or subconscious mind. At first I was inclined to think that the subconscious was a pure assumption, a convenient but rather desperate endeavour to explain the otherwise inexplicable. I have, however, been able to convince myself that the unconscious has a real existence, and that it is therefore legitimate to speculate upon its workings. And not only has it a real existence, but a definite and anatomical local habitation. To appreciate this fact we must once more return to first principles.

On looking back through the ages it is not difficult to realize that mind must have existed in the scale of evolution not only before man was moulded, but even before the vertebrates emerged. The ganglion cells which constituted the nervous system of the invertebrates were the ancestors of our autonomous or sympathetic nervous system. These ganglion cells were the organs of a mind, a very primitive and rudimentary mind no doubt, but quite adequate and effective so far as the needs of its possessor were concerned. The function of these ganglion cells was to control breathing, circulation, feeding, excretion, and reproduction, and the ganglion cells of our sympathetic nervous system are their lineal descendants, performing the same functions for us as the original ganglia performed for our invertebrate ancestors. Now, closely associated with these original ganglia, and practically coeval with them in the scale of evolution, are the endocrine glands. The system thus evolved was the organ of a mind. It received an impression and responded thereto by an act, which, by constant repetition became customary or automatic. If, for example, you inadvertently touch an object which is very hot, you remove your hand with great rapidity, long before the sense of undue heat has reached your consciousness. You perform, in fact, a reflex. The whole of our purely animal physiological life is dominated by these reflexes, situated in the sympathetic or vegetative system. The workings of our viscera, which normally never reach our unconsciousness, are the most orderly and best disciplined things we possess. It is therefore obvious that they must be under the guidance and control of something which for want of a better term we are compelled to call a mind.

Now this unconscious mind is not only automatic, it is also constructive. Arbuthnot Lane has shown us how, in order to counteract undue mechanical strain in the adult skeleton, supporting bands of considerable ingenuity in design and complexity in structure are developed. Their manufacture is quite unconscious, but no one who has studied them could for one moment doubt that they are the result of thought. They are not haphazard; they are beautiful illustrations of the laws of mechanics. Moreover, if there be no such thing as an unconscious mind, how are we to explain the hypertrophy of organs in response to a special demand? How else are we to explain the phenomena of intuition, the process by which people, chiefly women, arrive at a correct conclusion by a jump, as it were? Such a person will tell you that she knows; she cannot tell you how she knows; she says she just knows. And, the devil of it, she does know! The reason is, of course, that the primitive, the visceral, the autonomous or unconscious mind gives information to the conscious, but like a wise judge it announces its conclusions but withholds its reasons. I feel that I must in passing emphasize the fact that our vegetative nervous system, this organ of our unconscious mind, includes practically the whole endocrine system. The ganglia of the sympathetic have the closest possible relationship with the suprarenals and, through these, with each and all the ductless glands.

Now, I am no psychologist, still less am I a psycho-analyst, but events during and since the war have brought home to me the fact that ordinary physicians cannot afford to neglect the operations of the unconscious mind. In my young days our elders spoke gravely of the influence of mind over matter. They did not know what they meant, and our intolerant youthful scepticism convinced us that the words meant nothing at all. Nevertheless, they do mean a great deal, and they are rapidly coming to occupy an honourable place in the domain of therapeutics.

When M. Coué came to London I went to hear him, and subsequently read the book by M. Baudouin which sets forth the principles of the New Nancy School, of which M. Coué is the originator. To the experienced psychotherapist there is nothing new in this teaching, but to the ordinary physician there is. Or rather should I say that the ordinary physician will find in this teaching the orderly presentation of many facts and considerations of which he was previously cognizant, but so vaguely cognizant as to render his knowledge useless.

We are rapidly passing out of the sector of drug therapeutics in which most of us were brought up, and are being forced to take our bearings in fresh areas. Among these the area of rational psychology is by no means to be neglected. We know something about the anatomy of the unconscious mind; let us study its physiology. Suggestion is a strong living force, and auto-suggestion an even stronger. These forces should not be left to quacks and charlatans to play with. They should be studied, harnessed, and exercised by responsible medical men as a part of the ordinary therapeutic armamentarium. No one has a better opportunity than the general practitioner of utilizing these forces for the public benefit, because no one finds his patients in a more receptive or suggestible condition. Rational psychology should no more belong exclusively to the psychologist than digitalis should be the monopoly of the cardiologist.

REFERENCES.
[1] See H. W. C. Vines, *Proc. Roy. Soc. Med.*, 1922, vol. xv. [2] BRITISH MEDICAL JOURNAL, October 21st, 1922, p. 763. [3] Ibid., January 20th, 1923, p. 130.

AN OPERATION FOR ATROPHIC RHINITIS (OZAENA).

(Preliminary Note.)

BY

JAMES ADAM, M.A., M.D.,

SURGEON FOR DISEASES OF EAR, NOSE AND THROAT, STOBHILL HOSPITAL, GLASGOW, AND GLASGOW ROYAL INFIRMARY.

THE pathogeny of atrophic rhinitis is still a matter of dispute; this is due possibly to want of attention to classification of cases and need not now be discussed. What is not in dispute is that, apart from epithelial metaplasia, undue width of nostril—that is, of the whole nasal passage from vestibule to choana, whether this width be primary or secondary—is an important factor in stagnation, drying, putrefaction, and fetor of the nasal secretion. Where the disease is unilateral it is in the wider nostril, or worse in it.

To prevent the formation of the stinking crusts characteristic of the disease various operative measures have been devised. Submucuous injection of paraffin sometimes succeeds in narrowing the nasal passages sufficiently to enable the patient to cleanse his nose by blowing and so lessens crusting and fetor. But frequently, and especially in extreme cases, the mucosa will not hold much paraffin, even though the paraffin injection is preceded by one of anaesthetic fluid so as to create a pocket; the paraffin perforates the membrane when more than a little has been injected. Moure tries to meet this by prior vibratory massage of the mucosa for months so as to revivify it. In my hands the paraffin method has been on the whole disappointing. Translation of the inner antral wall toward the septum (Halle) seems rather a formidable measure, hardly likely to be generally adopted.

While paraffin may continue to be used for the less

severe cases, for others a more satisfactory method than either of those mentioned was suggested to me by a case in which the crusts were confined to the left nostril. In this girl, aged 14, the right nostril was occluded by a cone-like deviation of the quadrangular cartilage. The left nostril was extremely wide, at least an inch between septum and antral wall below the anterior end of the middle turbinal; turbinal atrophy was marked. The cone was resected through the right nostril with the idea of replacing it with its apex inverted towards the left nostril. Unfortunately the cone broke, but the pieces were pushed under the muco-perichondrium of the left side of the septum. The improvement that resulted was probably due to the freeing of the right nostril, as the left is still too wide, and it has been agreed to do the operation now to be described—transplantation of rib cartilage.

Flakes of cartilage are, with a wide, sharp gouge, taken from the seventh or eighth costal cartilage, and after incision and elevation of the muco-perichondrium of one side of the septum over the greater part of its extent and similar elevation on the inner antral walls between middle and lower turbinals, these flakes are introduced by suitable forceps—the swan-billed septal punch is excellent—into the pockets thus created, which are packed full. The incisions are closed by careful packing with bismuth gauze, which is left for four or five days.

Attention to the following points helps to guard against risks of septic infection, an important consideration in such cases with a closed wound.

Local anaesthesia should, if possible, be used. An intranasal douche with normal saline should be given before the anaesthesia till no trace of pus can be seen. The nose and face must be cleansed with spirit, and the vestibule painted with iodine tincture. The costal wound is closed with an anchor dressing before the nasal operation is begun. If local anaesthesia is used, then, before the costal operation is begun, the nose is anaesthetized with cocaine and an injection, at the vestibule, of eucaine or novocain solution. The pieces of cartilage as removed are laid on sterile gauze and not touched except with instruments. They may be an inch or more long but neither broad nor thick; for to secure primary union and retention of the grafts the nasal wounds are best not more than 1 cm. long, placed vertically and just posterior to the skin margin, where they can be wiped with iodine.

I have done this operation in three patients, aged 15, 18, and 60 respectively—once under chloroform, twice under local anaesthesia—with primary union and retention of all the grafts in each case. All the patients expressed themselves pleased with the results in respect of comfort and diminution of discharge; but I am not satisfied, as the cavities are still too wide, though the result is better than could be got by any other method known to me. It is surprising how much cartilage can be packed into the pockets; the cubic capacity of the nasal airway is relatively great. To avoid necrosis of the septum the perichondrium can be safely elevated from one side only at one operation; this leaves the other nostril too wide. This defect will be met in future by storing the excess of costal cartilage in a subcutaneous pocket, whence it can be easily taken a month later for transplantation on to the second side of the septum.

Where only one nostril need be narrowed the operation would probably be better done from the other, narrower, nostril; a bevelled incision, longer than that indicated and carried right through septal cartilage but stopping short of perichondrium of the wider nostril, would allow complete elevation of the latter, thorough packing with transplants, and complete closure of the septal window owing to its bevelled edges and elasticity.

Any treatment of atrophic rhinitis, the ciliary brush being gone, can be only palliative. All that is claimed for the method here suggested is that in well developed cases it is more efficient than paraffin injection and less formidable than Halle's operation. The cases are too few and recent to judge results. The method is published that others who have more opportunity than I now have may try it and report.

ACUTE OTITIS MEDIA WITH JUGULAR BULB THROMBOSIS.

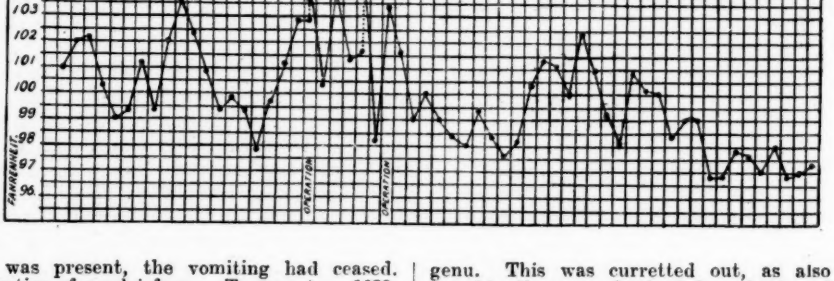
BY

E. WATSON-WILLIAMS, *M.C.*, CH.M., F.R.C.S.E.,

REGISTRAR, EAR, NOSE, AND THROAT DEPARTMENT, BRISTOL ROYAL INFIRMARY.

THE following case presents some very uncommon features, especially the absence of any of the usual signs of mastoid disease. The notes given explain the main features.

C. G., a girl aged 10, on February 11th, 1923, complained of sore throat, vomiting, and some right earache, beginning suddenly on the previous day. I saw her on the following day; she then had flushed face, dry lips, very furred tongue, and slight tonsillitis; both tympanic membranes were pink but not bulging. There was a little pain in the right ear, and on deep pressure in the postaural sulcus some tenderness, such as an acute myringitis might produce, but no tenderness over the mastoid process, no redness nor swelling there. Constipation was present, the vomiting had ceased. Her appearance was suggestive of scarlet fever. Temperature 102°, pulse 126, respiration 24.



On February 13th, the right ear was discharging. There was epistaxis in the morning and some vomiting; constipation continued. The child looked and felt better. There were no mastoid signs; the tenderness in the post-aural sulcus had disappeared. Temperature 99°.

Left myringitis occurred on February 15th, with rise of temperature to 102.6°. There was discharge from the ear on February 16th; on this day the vomiting ceased.

On February 18th, vomiting began again, with some diarrhoea, general abdominal discomfort, and tenderness, but no distension. Both ears were discharging; there was occasional slight right earache; no mastoid signs. The tongue and lips were very dirty and dry. The child was not well although the temperature was down to 99°. The case appeared to be possibly abdominal, and enteric was considered.

On February 21st, the temperature, after remaining down one day, rose again, and the child had a rigor in the morning. Still there were no signs of mastoid abscess; but after consultation, in the absence of any other reasonable possibilities, I decided to operate on the right mastoid, as there had once or twice been earache on that side. With the patient under ether, I performed the Schwartze operation. The mastoid cells and bone were absolutely normal; the antrum contained a very little mucoid material. I therefore exposed the ascending part of the lateral sinus; it was normal in colour and contained fluid blood; the wound was packed and left open. Lumbar puncture gave perfectly clear fluid under slightly raised tension: 15 c.cm. were withdrawn. Pathological report: Slight increase of cells and globulin, no organisms, culture sterile.

On February 24th the temperature remained high and another rigor occurred. Ether was therefore again given, and I exposed the internal jugular vein; it was perfectly normal. The lateral sinus, however, was filled with recent clot to a distance of two inches behind the genu. This was curretted out, as also the jugular bulb, and free bleeding was obtained from both ends. The sinus was packed off, and the jugular vein tied and divided. A small perisinous abscess was found superficial to the sinus, close to the bulb, and was drained. The bone surface was lightly rubbed with "bipp" and the wound packed. The pathological report stated that both clot and abscess contents grew streptococcus. Later that day the patient's condition was good.

Although subsequently the temperature rose again and I feared that the mischief was going to extend, it fell later by lysis, and convalescence was quite uneventful. Hearing was good in both ears. The child was discharged from the infirmary ward on April 3rd.

The course of events is on retrospect fairly clear: the jugular bulb was probably infected through the floor of the middle ear, the disease sparing the mastoid antrum and process. The result was a case very obscure right down to the discovery of the perisinous abscess, which did not exceed a pea in volume. I was not free from anxiety for some days after the second operation. The case well illustrates the necessity for operating sometimes on very slight local indications in the absence of other explanation of a severe infection.

For permission to publish these notes my thanks are due to Mr. J. P. I. Harty, F.R.C.S., who has recorded a somewhat similar case (*Bristol Med.-Chir. Journ.*, 143, September, 1921, p. 78).

ADRENALINE AS A POTENTIAL FACTOR IN HYPERTHYROIDISM.

BY

D. J. HARRIES, D.Sc., M.D., B.S., F.R.C.S.,

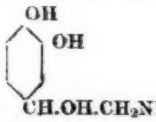
CONSULTING SURGEON, MOUNTAIN ASH HOSPITAL; SURGEON, CITY LODGE HOSPITAL, CARDIFF; ASSISTANT SURGEON, KING EDWARD VII HOSPITAL, CARDIFF.

In a former article (BRITISH MEDICAL JOURNAL, March 31st, 1923) I considered the relationship of the putrefactive group of intestinal organisms to the production of thyroxin. My present purpose is to consider the activity of the same group among the intestinal flora as a potential causative factor in regulating the supply of adrenaline. Berthelot isolated from the intestine a bacillus (*B. phenologenus*) which converts a solution of tyrosin into phenol. This represents a considerable advance in our knowledge of the intestinal flora, for although it had been known for many years that there existed in the intestine bacteria capable of converting the aromatic products of digestion into phenol, no specific function had been attributed to any specific and isolated species among these organisms. This observation suggests a concept which may be found to account for the production of adrenaline either from tyrosin, or else (more probably) from some hitherto unidentified aromatic body closely allied to tyrosin, and, like tyrosin, a product of digestion. Can we in the light of our present knowledge conceive of adrenaline as being produced from tyrosin?

The Amine Producers.

These organisms have the power of removing COO from the COOH group of an amino-acid, converting it into an amine containing one carbon group less than the amino-acid from which it was produced. Apply this to tyrosin. If we limit the function of the amine producers to effecting the change just mentioned, tyrosin becomes, not a body of the adrenaline group, but tyramin, a lower member of the series.

Adrenaline is represented by the formula—

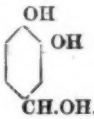


CH.OH.CH₂NH.CH₃ (catechol derivative);

that is, it differs from tyrosin in containing an extra carbon group. If we still regard it as being a derivative of tyrosin, we must attribute an additional function to the amine producers—that of elevating the series by the addition of another carbon group; or else we must postulate a similar synthetic process as being carried out by some other agency, such as the cells of the adrenal glands. Now, as far as the amine producers are concerned, such a view of the question presupposes a type of activity which is, generally speaking, exceptional rather than characteristic among the metabolic processes brought about by micro-organisms. Their function is mainly katabolic; they split up complex into simpler bodies, the building up of complex from simpler bodies being relegated to various types of living body cells. If, then, we are to regard adrenaline as being produced from tyrosin, we must assume the elaborative activity of some body cell (for example, the cells of the adrenal medulla) to be a factor in its production. On the other hand, if we are to regard adrenaline as being more directly a product of bacterial activity in the intestine, we must postulate the existence of some precursor other than tyrosin. We must seek for its source in some unidentified amino-acid which is, like tyrosin, a product of digestion, and structurally allied to tyrosin (so closely allied to tyrosin as to escape detection by the analytical processes hitherto employed), but which is higher placed in the series than tyrosin. Such a substance will be represented by the corresponding amino-butyric acid, with the formula—

CH.OH.CH.NH₂.CH₂.COOH (phenol derivative);

or, better still,



CH.OH.CH.NH₂.CH₂.COOH (catechol derivative).

Both the above could be direct precursors of adrenaline, needing only the intervention of the amine producers to effect the change; but as regards the catechol derivative it is important to note that Ebstein and Müller have demonstrated the presence of catechol sulphate in the urine. Such a concept of the origin of adrenaline traces it to a common source with the other endocrine secretion, thyroxin. As explained in my former article, thyroxin is regarded as being derived from tryptophane. Let us consider what happens if this common source (that is, the products of digestion) is interfered with. Such an interference arises when the putrefactive organisms disappear from the intestine. This state of affairs makes itself manifest biochemically, by the diminution or disappearance of indican and all other organic sulphates from the urine, and, clinically, by the development of the familiar syndrome of hyperthyroidism. But what is significant from the point of view of the present investigation is that hyperthyroidism implies not merely changes attributable to thyroxin, but equally important changes attributable to adrenaline, a state of affairs which we should expect if adrenaline and thyroxin are traceable to a common source—the end products of digestion. The absence of all the organic sulphates shows, in fact, that tryptophane and all the aromatic amino-acids are regulated by bacterial action. We should expect, therefore, a part of the syndrome of hyperthyroidism to be really hyperadrenalism. How far is this the case?

It enunciates no new theory to state that hyperactivity of the thyroid gland is accompanied by a corresponding activity of the adrenals. Hitherto this has been explained on the ground of an interaction between the thyroid and the adrenals, the so-called balancing of endocrine activities. From the foregoing paragraphs, however, the phenomenon is more rationally explained, not by some recondite interaction, but by a simple increase in the source of their particular secretions. To emphasize this I would quote the following pregnant paragraph from Professor Swale Vincent's *Internal Secretion and the Ductless Glands:*

> "It is doubtful whether a condition strongly resembling Graves's disease has ever been produced by the administration of thyroid substance to animals. But there can be little doubt that definite toxic effects can be produced by thyroid feeding. These are loss of body weight, gastro-enteritis, and diarrhoea, rather than tachycardia, nervousness, and exophthalmos."

A further important question to be considered in relation to hyperthyroidism is that of the increase in the basal metabolic rate, which is now so generally recognized to be an outstanding feature of the condition. There are two main factors affecting this increase. In the first place, it is due to the greater amount of amino-acids rendered available for absorption by the disappearance, or lessened activity, of the putrefactive group of intestinal organisms. In the ordinary course of events a part of the amino-acids would be converted into phenol, indol, and skatol, and would be excreted in the urine as aromatic sulphates. By being

absorbed, instead of being thus excreted, they exercise the typical effect of protein bodies on metabolism—that is, they stimulate metabolism to a degree considerably in excess of their mere calorific value. The same fate also overtakes the fatty amino-acids. The second factor to be noted is this: that if we can assume that the source of adrenaline is to be found among the amino-acids in the intestine produced by the digestive ferments, the failure of the putrefactive organisms still further to split up this precursor into an excretable substance again has a specific bearing upon the increase in the basal metabolic rate, for it is now generally conceded that adrenaline is the sensitizer of the sympathetic nervous system, "the katabolic nerve of the body."

A CASE OF TORSION OF THE GALL BLADDER.

BY

HERBERT C. JONAS, M.D., B.S.LOND.,

SURGEON TO THE BARNSTAPLE AND NORTH DEVON INFIRMARY.

SINCE torsion of the gall bladder is, and from the nature of the case must always be, an extremely rare accident, every case is worth recording.

A woman, aged 67, under the care of Dr. Seal, of South Molton, was taken suddenly ill at 10 p.m. with acute pain, distributed over the abdomen generally. She vomited and was collapsed, but not with the intensity seen in a case of perforation; there was a slight action of the bowels during the night or the early morning. The pain was not relieved, and from about 8 a.m. she was unable to pass flatus. The vomiting increased, and became green with bile; it was never stercoraceous, and never offensive. Dr. Seal could feel a tumour on the right side of the abdomen on the following morning. There was no rise of temperature.

She was seen in consultation with Dr. Seal at 6.30 p.m., when her expression was anxious but not intensely so; the pulse was just under 100, of fairly good volume and regular. The general condition was such as to give any prospective surgeon a reasonable hope of a favourable result of surgical interference.

The abdomen moved badly with respiration, but still it did move. There was a distinctly visible swelling on the right of the middle line. There was no distension, and no visible peristalsis. The mass on the right side was sausage-shaped, with the lower end blunter and more pronounced than the upper. Its long axis was tilted so that the lower end was slightly to the right of the vertical and the upper to the left. It did not appear to move with respiration, and was freely movable in all directions; the hand could be got between it and the liver above the tumour. Auscultatory percussion gave no indications of any connexion with the liver.

It was obvious that some acute abdominal condition was present, and the history pointed more to an intestinal obstruction than either a perforation or an inflammatory process, and it was thought probable that it was a case of growth in the colon, although the fact that the lower end was the more defined and the upper the less mobile was rather against this.

The physical signs connected with the very obvious tumour were distinctly puzzling. The swelling was exactly in the position of the gall bladder, but it was movable, seemingly in all directions. The liver could be felt moving with respiration and the tumour seemed not to move with it. Auscultatory percussion failed to show any connexion between it and the liver. There was no history of any previous trouble in the gall bladder, and there was no temperature to suggest a cholecystitis. The question of torsion or volvulus was never considered.

Operation.

The patient was with considerable difficulty persuaded to submit to operation; it was performed the same evening. Before the peritoneum was opened a dark red mass was seen, exactly like one sees when operating for extrauterine gestation. As soon as the peritoneum was opened a very little serous fluid escaped, and it was found that the tumour was a large gall bladder, quite black and nearly gangrenous from strangulation by two half-turns of the neck just at the edge of the liver. The turns were from left to right. After reducing the twist the gall bladder was removed with the greatest ease, since the point of constriction could be readily brought out of the abdomen, and the ligature could be applied to perfectly healthy tissue. The patient made an uneventful recovery.

The organ when removed was about the size and shape of a large pear. The walls were very much thickened, and it was quite black with extravasated blood. It was tightly distended with blood-stained bile, and it contained ten or twelve moderate-sized gall stones. Three of the larger of these were tightly lodged behind a valve or fold of mucous membrane; from their position and the thickness of the wall, they might easily have been overlooked during the course of an ordinary cholecystotomy.

Irwin in recording a case has collected seven previous ones, in only one of which were gall stones found. He also comments on the difficulty of diagnosis. Judging from the case under consideration, the difficulty would seem to lie chiefly in the fact that the possibility of its occurrence is not taken into account. In spite of the fact that the tumour did not move with respiration, and that it seemed to be free from the liver, there is no doubt that at the time of examination the lower rounded end of the mass and its position were distinctly suggestive of gall bladder, and if the surgeon had in his mind the possibility of this condition being present it is more than likely that he would arrive at a correct diagnosis.

With regard to success of laparotomy, which Irwin also mentions, if all cases were as easy and straightforward as the one under discussion the surgeon could have nothing to fear, so far as mortality is concerned, beyond the ordinary anaesthetic risk.

ILEO-COLIC INTUSSUSCEPTION CAUSED BY MECKEL'S DIVERTICULUM AND SIMULATING ECTOPIC GESTATION.

BY

H. H. GREENWOOD, B.S.LOND., F.R.C.S.ENG.,

HONORARY SURGEON, VICTORIA HOSPITAL, SWINDON.

THE two features in the following case which seem to warrant placing it on record are, first, the mimicry of ectopic gestation and the absence of the usual signs and symptoms of an ileo-caecal intussusception, and, secondly, the impossibility of reducing the intussusception by the ordinary methods, on account of the tight grip of the ileo-caecal valve.

A woman, aged 30, who had been married for three years, and during that time, and indeed all her life since puberty, had had no menstrual irregularity, ceased to menstruate three months before she was taken ill. As she was in good health at the time, she concluded that she was pregnant.

On June 16th, 1922, she was seized with acute abdominal pain, definitely located in the right iliac region, and occurring in spasms of variable duration; in the intervals she was not entirely free from pain. On that day she vomited once, but not afterwards. On June 18th she called in Dr. Young, who suspected a tubal

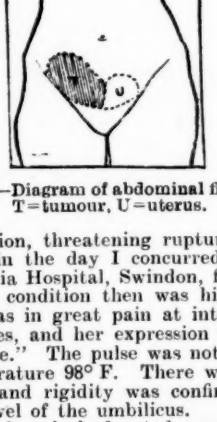


FIG. 1.—Diagram of abdominal findings; T=tumour, U=uterus.

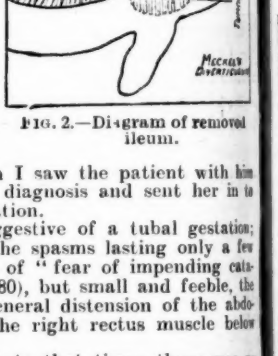


FIG. 2.—Diagram of removed ileum.

gestation, threatening rupture; when I saw the patient with him later in the day I concurred in the diagnosis and sent her in to Victoria Hospital, Swindon, for operation.

Her condition then was highly suggestive of a tubal gestation; she was in great pain at intervals, the spasms lasting only a few minutes, and her expression was one of "fear of impending catastrophe." The pulse was not rapid (80), but small and feeble, the temperature 98° F. There was no general distension of the abdomen, and rigidity was confined to the right rectus muscle below the level of the umbilicus.

The bowels had acted normally up to that time; there was no diarrhoea, neither mucus nor blood in the stools, no tenesmus, and no swelling typical of an intussusception. On bimanual examination the uterus, enlarged, but somewhat indefinite in outline, could be felt pushed over to the left by a large elastic swelling which bulged down into the right lateral fornix and was felt to be continuous with a similar swelling in the right iliac fossa. This abdominal swelling reached nearly to the level of the umbilicus, was tender, and did not vary in size. The rigidity of the rectus over it rendered precision of palpation impossible.

Operation.

With the assistance of my colleague Dr. Young, at 9.30 p.m. a paramedian incision was made below the umbilicus, and the uterus, of the size of a three months' pregnancy, together with the appendages were found lying over to the left and physiologically normal. The appendix, presenting nothing abnormal, was drawn out of the wound. There followed the caecum, so mobile that it was easily pulled completely out of the abdominal wound after being dislodged from the pelvis in which it had lain. After packing off the rest of the abdominal contents the caecum was more closely examined; it was found to be very large and soft, and within its lumen could be felt a harder, more elastic, and slightly movable tumour. The entering ileum was also swollen to double its normal

diameter, its walls thickened and rigid. Realizing the existence of an intussusception, I followed the small gut upwards and came upon the commencement of the lesion some twelve inches from the ileo-caecal valve. Attempts to "milk" back the intussuscepted bowel were ineffectual, and I therefore removed the appendix, enlarged the opening so left in the caecum, and with two fingers inside the caecum reduced the protruding gut through the ileo-caecal valve. It was only by patient and careful manipulation that this could be done, so tightly was the small bowel gripped by the valve. The whole of the intussusception was then, with comparative ease, reduced, and as the last portion emerged a Meckel's diverticulum turned itself inside out, resuming its normal position and appearance. The wound in the caecum was then closed.

The diverticulum was on the antimesenteric border, was short, and its lumen wide. On each side of it the bowel was ecchymosed and of very doubtful vitality. Within the lumen of the gut, at the level of the diverticulum, there could be felt a soft swelling. I removed six inches of ileum, including the diverticulum, performed a lateral anastomosis, and after fixing the mobile caecum in its normal position by catgut sutures, closed the abdomen without drainage.

Recovery was uneventful, and the patient left hospital three weeks later free from symptoms, the pregnancy continuing normally. The pathologist reported: "The intussusceptum consisted of a portion of bowel in a state of acute congestion and commencing gangrene from strangulation of the blood supply. It contained in its cavity a mass of breaking-down blood clot."

A CASE OF RAT-BITE FEVER.

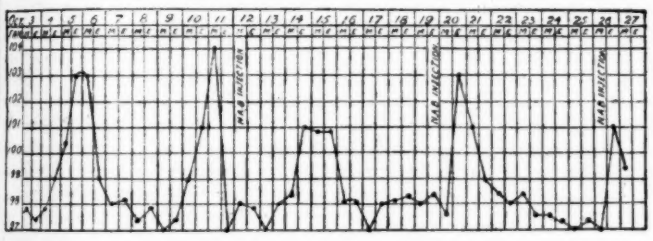
BY

J. ODERY SYMES, M.D.,

SENIOR PHYSICIAN TO THE BRISTOL GENERAL HOSPITAL.

RAT-BITE fever is not of common occurrence in this country, and the following case is so typical in character as to merit publication.

T. H., a boy aged 13 years, whilst on holiday in Devonshire was bitten on the left hand by a rat, on August 16th, 1922. The wound was not a severe one, and on the following day it was washed with carbolic lotion and dressed by a surgeon. It did not suppurate, and the doctor who saw the wound on August 23rd said it was doing well. It subsequently healed. About August 30th the wound was red and oedematous, and the temperature rose to 103° F. Two incisions were made near the wound, but no pus was found. During the following week the temperature rose again, but the boy was well enough to make a long journey to his home at Clevedon on September 7th. He was then seen by Dr. Hubert, who dressed the hand and found a little pus escaping. The wound healed rapidly, but from time to time until the date on which I saw him (October 11th) he


AUG 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E
104
103
102
101
100
99
98
97
RAB INJECTION
RAB INJECTION
RAB INJECTION

was subject to a rise of temperature varying between 102° and 104° F., coming on every three or four days, and lasting for two days. Each return of fever was accompanied by the appearance of a patchy erythematous rash all over the body. There was no lymphangitis. The scar was healthy, and not reddened. There were two small lymphatic glands palpable in the left axilla, and one in the left posterior triangle of the neck. The left hand was cyanosed. During the height of the fever there was a peculiar smell about the patient, reminding one of a hot wet dog. On one occasion there was a trace of albumin in the urine. He was brought to a nursing home under my care on October 12th, and 0.15 gram of novarsenobillon was injected intravenously on October 13th; further doses of 0.3 gram were given on October 19th and 26th, just before the rise of temperature might be expected. The fever which followed each of these injections was brief, and on the first two occasions only was accompanied by a rash which was of both an erythematous and urticarial character. The rash lasted for twelve hours. The blood was examined by Dr. Hadfield on October 14th. His report was as follows:

Red blood cells	4,100,000 per c.mm.
White blood cells	7,850 "
Haemoglobin	78 per cent.

There is no abnormality in the differential leucocyte count. The blood was examined by taking films and a thick drop. No parasites were seen. There is, however, slight polychromatophilia. This and the anaemia are the only pathological findings.

The patient went home on October 19th and made a quick convalescence. There has been no return of fever. No parasite was found in the blood of this case, but it seems probable that the disease is identical with that seen in India, which is associated with a spirochaete discovered by Futaki in 1915 (*S. morsus muris*). The incubation period is usually two or three weeks. The initial wound heals normally in a few days, but later becomes swollen, painful, and red. Fever recurs every five or six days. The urine is increased in quantity, and contains albumin and casts. In India about 10 per cent. of untreated cases die. In any case convalescence is slow and there is emaciation and anaemia.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

RINGWORM AND ITS TREATMENT.

ALL present methods of treating ringworm require prolonged supervision, and even *x*-ray treatment requires some three months. At the school clinics in Blackburn, in 1920, I experimented with various methods of treatment, and by the end of the year I began to get rapid results with the following method:

The hair is cut short, permitting a good examination of the whole surface, the affected parts are shaved, and then washed with ether soap, dried, and the following lotion applied: Calomel 5 grains, tinct. iodi (*B.P.*) 1 drachm; stir with glass rod—a reddish precipitate is formed. This lotion is poured upon small pieces of cotton-wool and applied to the ringworm area by gentle rubbing. The piece of wool is then discarded, clean white lint applied and bandaged. The child returns to the clinic the next day, the dressings are removed, the areas are washed well with ether soap, ammoniated mercury ointment (*B.P.*) applied, and a bandage again used. This process is continued until cure results, generally within fourteen days; the child is ready to return to school during the third week.

During 1921, 61 cases of ringworm of the hairy scalp, 2 involving the whole hairy scalp, forehead, and neck, were treated at the clinics by this method; the average number of days required for cure was eighteen. The shortest period was six days, the longest thirty-seven days; in this case two children at home were being treated for ringworm by the mother; this explained the fresh areas of ringworm on our patient's head which arose during treatment.

The calomel iodine lotion must be applied gently, and must be freshly prepared for each case. If rubbed in instead of gently daubed on, within a few hours' time the child suffers severe pain, due to a burn of the first or even second degree; in the first case a mild erythema, and in the second case erythema and small blisters, simulating erysipelas. I have only had three such cases, and those among my early cases. The best treatment of these early burns is to apply a mixture of olive oil 3 parts and castor oil 1 part. The lotion need be applied only once; it seems to penetrate and destroy the parasites perhaps by the liberation of nascent iodine. The further treatment described keeps the surface clean and rubs out all loose hairs. In several cases a chronic scurfiness continued, but cleared up when the oil application was used. All the 61 cases mentioned have been kept under observation and in no case was there any recurrence.

As the lotion is very active, I considered it necessary to limit the surface of application by dividing the scalp into six equal areas. On the first day the whole scalp is washed with ether soap, and dried. To area 1 freshly prepared calomel iodine lotion is applied gently, and ammoniated mercury ointment rubbed into the remaining five-sixths; the head is then bandaged. On the second day the five-sixths part is washed with ether soap, and the lotion applied to another sixth part. The part to which the lotion was applied is then washed as a separate area, and ammoniated mercury ointment applied, and so on. On the seventh day the whole head is again treated as one area with ether soap wash, and ammoniated mercury ointment applied.

Ringworm of the body receives similar treatment, the child remaining at school, as the condition is cured within

forty-eight hours. When applying the calomel lotion care must be taken to prevent it running down the scalp.

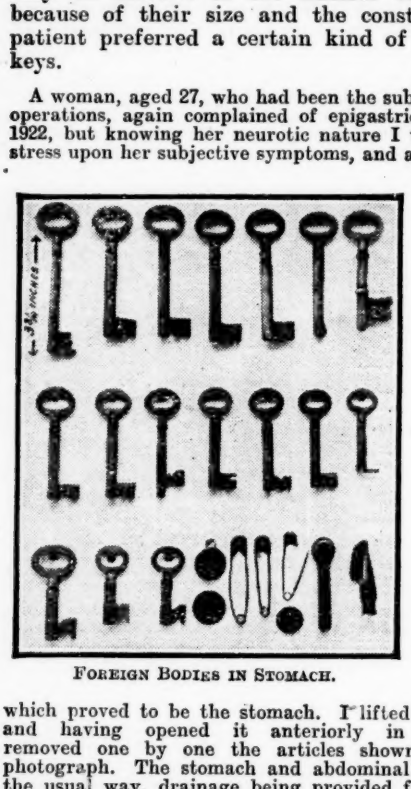
I have to thank Mr. Holroyd, head of the Chemical Department of the Blackburn Technical College, for giving me the following analysis of the active lotion. He says: "The precipitate is mercuric iodine together with a little calomel. The filtrate from this precipitate contained a mixture of the chlorides and iodides of potassium and mercury. For purposes of convenience the mixture may be said to consist of potassium chloride 0.75 grain and mercuric chloride-iodide 2.95 grains."

JAMES ROBERTSON, M.B., D.P.H.,
Assistant Medical Officer of Health and Medical Officer of Schools, Blackburn.

FOREIGN BODIES IN THE STOMACH REMOVED BY OPERATION.

THERE have been many cases recorded of foreign bodies being swallowed and removed from the stomach by operation, but the following is perhaps worthy of record, not only on account of the number of articles found, but because of their size and the constancy with which the patient preferred a certain kind of article—namely, iron keys.

A woman, aged 27, who had been the subject of several abdominal operations, again complained of epigastric pain early in January, 1922, but knowing her neurotic nature I was inclined to lay little stress upon her subjective symptoms, and as her objective symptoms were *nil*, I temporized. A few weeks later she again came to me, and I found slight tenderness in the right upper quadrant of the abdomen. She was vomiting frequently. I kept her in bed, and on deep palpation a movable mass was felt in the region of the gall bladder. A skiagram was taken, but as the plate was spoiled, and as the pain had become more acute again, I decided not to wait any longer.



FOREIGN BODIES IN STOMACH.

I opened the abdomen by a vertical epigastric incision through the right rectus and found the gall bladder to be normal. While passing my hand down over the duodenum I felt a hard irregular mass, which proved to be the stomach. I lifted it out of the abdomen, and having opened it anteriorly in the prepyloric area, removed one by one the articles shown in the accompanying photograph. The stomach and abdominal parietes were closed in the usual way, drainage being provided for by means of a small rubber tube, left in the wound for forty-eight hours. The patient made an uninterrupted recovery.

She had not at any time given me the slightest hint as to her peculiar diet, and she must have been swallowing the articles for at least six weeks. The complete list is: 17 keys, the largest of which was 3⅜ inches in length; 2 coins (one with a ring through it); 3 safety pins (one open); 1 button; 1 engineer's split pin; and 1 pencil sharpener.

A. GEORGE BRAND, M.B., Ch.B.
Ayr County Hospital.

THE late Mr. Arthur Leaman Crosfield, of Oxton, Birkenhead, who left personal property valued at £44,898, has bequeathed one-fourth of his estate to the Hospital for Women, Liverpool; one-eighth to the Hospital for Cancer and Skin Diseases, Liverpool; and one-sixteenth to the Liverpool Sanatorium, Delamere Forest.

IN a recent communication to the Royal Society Drs. Leonard Hill and Eidinow state that the biological action of light is accelerated by warmth, retarded by cold. This was found to be true for bacteria, infusoria, and human skin. By adequate exposure to cool air overaction of the sun on the skin can be prevented. The success of heliotherapy applied to children with surgical tuberculosis, depending as it does on exposure to sun and cool air, can probably, the authors think, be secured for cases of phthisis if they are no longer exposed in hot sun boxes, but suitably stripped and exposed in cool air.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

CAPE OF GOOD HOPE (WESTERN PROVINCE) BRANCH.

THE Cape of Good Hope (Western Province) Branch was entertained by the medical superintendent and visiting staff of the New Somerset Hospital, Cape Town, on April 13th, when a clinical evening was held. Two sections were organized—one, surgical, in charge of Mr. C. C. ELLIOTT, and the other, medical, in charge of Professor A. W. FALCONER.

Mr. C. C. ELLIOTT showed cases of depressed fracture of the skull, depressed fracture of the supraorbital ridge, and, for diagnosis, a case of tumour in the right inguinal region in a male European. He also exhibited an excellent specimen of an excised Gasserian ganglion. Mr. H. A. MOFFAT demonstrated an old dislocation of the head of the radius, a fracture of the head of the radius, a fracture of the carpal scaphoid, and a tuberculous shoulder-joint. Mr. C. F. M. SAINT exhibited an interesting and unusual case of psoas abscess, with superimposed pneumococcal infection. He also showed a case for diagnosis, probably duodenal ulcer, and a tuberculous shoulder-joint. Dr. A. REITH FRASER exhibited a case of digital chancre in a coloured midwife, and one of granuloma inguinale in a Kaffir which had failed to respond to intravenous tartar emetic and intramine. Professor E. C. CRICHTON showed an interesting collection of pathological specimens. A series of radiograms exhibited by Dr. H. W. REYNOLDS included cervical ribs, fractured skull, fractured spine, bone graft, talipes calcaneo-cavus, and perforating gastric ulcer. Professor A. W. FALCONER conducted the medical section to his wards, where cases of amoebiasis, cerebellar tumour, and gummatous meningitis were demonstrated. Dr. D. P. MARAIS showed a specimen of a cerebellar growth *post mortem;* he also demonstrated a case of Addison's disease, and several cases of children indicating the value of heliotherapy in strumous conditions. Mr. D. J. WOOD's collection of eye cases included a rare example of glaucoma in a child 7 years of age. This was believed to be a record in the matter of age incidence, and tended to upset preconceived speculative theories regarding the etiology of glaucoma — a condition which had been taught to be unknown in childhood. Other cases included chalazion, tuberculosis of the conjunctiva, trachoma, and spring catarrh. There were sixty-nine members present.

On April 27th Dr. O. M. GERICKE read a paper entitled "In the days of Van Riebeeck." He outlined Van Riebeeck's medical and political career, and gave an interesting account of the establishment of a hospital at the fort in Table Valley in 1652, the nature of the various sicknesses in the valley, and the need for such an establishment. Van Riebeeck's contemporaries in Europe, the state of public health and sanitation in England, France, and Holland at that period, the universities, the teaching methods, the first London Pharmacopoeia, and the materia medica of the times generally were passed under review. The paper stimulated a keen discussion, in which Dr. DARLEY-HARTLEY, Dr. A. REITH FRASER, Dr. DE BEER, Dr. D. P. MARAIS, and Dr. R. SHARP took part.

Dr. R. A. BARLOW then read a paper on "Some surgical complications of influenza." He laid emphasis on the extremely large proportion of cases of influenzal bronchopneumonia which were followed by empyema, met with in the Royal Navy during the pandemic of 1918-19. The difficulty of making a diagnosis in this condition was due to lack of conformity with the usual textbook symptomatology. The advantages to be gained from delaying open operation until repeated aspiration had been fully tried out were clearly stated; in this connexion a certain measure of success had followed the use of intravenous eusol in septicaemic cases. Other complications discussed included appendicitis, perinephric abscess, surgical emphysema, and otitis media. Mr. C. C. ELLIOTT and Dr. D. P. MARAIS discussed the paper, and the President, Dr. C. M. MURRAY, thanked Dr. GERICKE and Dr. BARLOW for their interesting contributions.

ULSTER BRANCH.

A CLINICAL meeting of the Ulster Branch was held in the King Edward Memorial Hall of the Royal Victoria Hospital, Belfast, on May 31st, with Mr. ANDREW FULLERTON, President, in the chair. The following cases and specimens were shown:

Drs. DARLING and PEDLOW (Lurgan): The specimens of an ovarian pregnancy, and a patient on whom Rammstedt's operation had been successfully performed.

Mr. MITCHELL: A case of grafting of sarcoma of tibia four years after operation, with *x*-ray photographs showing the progress of the case; and two cases of plating for fractured femur, with *x*-ray photographs.

Mr. IRWIN: A case of tibial bone graft for spondylolisthesis, and Mr. CRYMBLE a testicular tumour.

Dr. R. MARSHALL: A case of dystrophia adiposo genitalis, in a boy who was losing weight at the rate of about a pound a week under 2 grains of pituitary gland.

Dr. MCKISACK: A case of gumma of brain, where the symptoms had disappeared under treatment.

Dr. SMYTH showed charts of the effect of insulin, and gave a demonstration of some experiments.

Dr. ALLISON exhibited charts showing results of fractional examination of stomach contents; the curves of duodenal ulcer and chronic appendix, as confirmed by operation, were often closely similar, and even *x*-ray photographs of opaque meals did not always differentiate. The two together formed a most valuable help.

Dr. CALWELL: A case of a young lad with mental deficiency, subject to petit mal, who was admitted with an attack closely resembling hystero-epilepsy, but which cleared up in a couple of weeks; and a case of a young girl, under-developed, who was admitted with sudden clouding of consciousness, from which, in about three weeks, she has suddenly recovered; also specimens from a case of hypernephroma of kidney with secondary deposits in brain, lungs, intestines, etc.

Mr. KIRK: A case of advanced scirrhus of breast treated with vaccines, colloids, and operation; two specimens of tuberculous ulceration of ileum successfully resected; recent case of excision of knee-joint; recent intertrochanteric fracture of femur, following accident, with *x*-ray photographs; a case of traumatic paraplegia.

Professor MACILWAINE: Some abnormal electro-cardiograms indicating lesions in the conducting system of the heart.

Dr. BOYD CAMPBELL: A case of subacute bacterial endocarditis, with the now classical signs of paleness, clubbing of finger-ends, petechiae, enlarged spleen; a non-haemolytic streptococcus was found in the blood.

Mr. HOWARD STEVENSON: A specimen of a brain with a large endothelioma of the right frontal sinus; a decompression had been performed three years before for headache, and a meningocele had formed over the site, from which large quantities of clear cerebro-spinal fluid were taken from time to time, up to 300 c.cm. in a week; epileptic turns developed, in one of which the patient seriously injured his arm, and died. Microscopic slides showed the whorled arrangement of the tumour, and some typical psammoma bodies.

The PRESIDENT (Mr. Fullerton) showed the following among other cases: Subtotal cystectomy for malignant disease of bladder with implanting of ureter; hour-glass contraction of stomach treated by gastro-enterostomy; an obscure case of urinary obstruction; decortication of lung in a child 2 years old who had suffered from empyema for eighteen months; after-result of laminectomy for gunshot wound of spine—the hole in theca was covered by a thin layer of muscle; and chronic colitis treated by appendicostomy and vaccine.

THE seventeenth French Congress of Medicine will be held at Bordeaux from September 27th to the 29th. The subjects to be discussed include: Remote sequelae of meningitis (Professor Le Dantec of Bordeaux), relations between the sympathetic and the endocrine glands in pathology (Professor Pachon of Bordeaux and Dr. Perrin of Nancy), treatment of meningococcal infections (Dr. Dopter of Paris and Dr. Boidin).

THE Medical Congress held annually at Brussels under the name of "Les Journées médicales de Bruxelles" will take place this year from June 24th to the 27th. The following addresses will be given: Our knowledge of prehistoric man, by Professor Pittard of Geneva; the high traditions of army surgery in France, by Professor Forgue of Montpellier; ileo-colic stasis, by Professor de Beule of Ghent; French medicine and social laws, by Professor Balthazard of Paris; new discoveries in the prophylaxis and treatment of syphilis, by Professor Levaditi; the fight against cancer in France, by Professor Bergonié of Bordeaux; and the medical profession and hygiene, by Dr. Rolot of the League of Nations.

Reports of Societies.

PRIMARY CANCER OF THE LIVER.

A MEETING of the Pathological Section of the Royal Academy of Medicine in Ireland was held on May 25th, with the President, Dr. W. D. O'KELLY, in the chair, when Dr. G. E. NESBITT described a case of primary cancer of the liver. The patient, aged 21, had a history of some injury to the back, from which he dated his illness. The only marked symptom at first was a large mass which could be felt in the liver. The patient died of haemorrhage into the abdominal cavity ten days after admission to hospital. Dr. J. H. POLLOCK described the pathological conditions. The point of haemorrhage could not be determined, but there appeared to have been a general oozing. The tumour was bile-stained, and there were metastases in the lung and mediastinum. The tumour also penetrated into the vena cava. Dr. V. M. SYNGE described another case of primary cancer of the liver, in a boy aged 17. When admitted to hospital the patient was suffering from vomiting and wasting. On examination it was found that he had considerable ascites, and a hard mass felt in the abdomen was thought to be a matted mass of tuberculous glands. At operation a number of small nodules were found studded over the peritoneum, while a larger obviously cancerous mass was attached to the liver; cancer developed in the operation wound. The boy lived for six months in hospital. At the *post-mortem* examination a large tumour attached to the splenic flexure was found to occupy the left lobe of the liver, and a great number of nodules were scattered over the peritoneum. The diaphragm was thick and leathery. No metastases were found in the lung. No primary focus was found elsewhere. The cell masses were mostly diffuse, solid collections of cells, and showed no lumen. The PRESIDENT recommended a careful search of the pancreas in these cases of liver cancer, as a small primary focus might possibly be found there. Professor A. C. O'SULLIVAN said that the second case was undoubtedly a genuine liver cell cancer, and he felt inclined to classify the other as also derived from the liver cells rather than from the bile ducts. Dr. Synge's case resembled one which he had shown some years ago, in which the liver cells over a considerable area could be traced through a transition first into small abnormal cells like those of the bile ducts, and then into the diffuse masses of the tumour.

Dr. G. E. NESBITT described a case of sarcoma in an ex-soldier aged 30; it seemed to be a typical case of advanced pulmonary tuberculosis, except that the patient suffered from great pain in the right side of his chest. At the autopsy the primary growth was situated in the front wall of the thorax, probably arising from one of the bones, and there were metastases in the heart as well as elsewhere.

Dr. A. R. PARSONS described a case of pneumococcal meningitis, which was first diagnosed as tuberculous meningitis on account of a mistaken report on an enlarged gland of the neck which was incised. On lumbar puncture the turbid cerebro-spinal fluid was found to contain pneumococci. There was some improvement after lumbar puncture, but death eventually ensued.

Dr. B. H. MICKS gave notes on a case of encephalitis lethargica.

There was a sudden onset with vomiting, followed by severe neuralgic pain on both sides of the head and both upper extremities. Pain lasted for a week, accompanied by insomnia, and then the patient, a man aged 56, began to suffer from illusions and delusions, by which he was never dominated completely. A generalized persistent muscular twitching was observed, with slight lethargy, but no marked tendency to somnolence. There were no signs of meningeal irritation, no marked motor disturbances, and the optic discs were normal. Slight continuous fever was present, the highest recorded temperature being 102° F. on the day of death. There was slight leucocytosis, 10,500 per c.mm.; Wassermann and Sigma reactions were negative. On *post-mortem* examination round-cell infiltration was found around the vessels in the cerebral substance, but not around those in the meninges. There were well marked round nuclei in floor of the fourth ventricle and upper portion of the spinal cord. Death had occurred with all the signs of respiratory and cardiac failure.

The case was discussed by Dr. ABRAHAMSON, Dr. MACFETRIDGE, Dr. NESBITT, Dr. WIGHAM, and the PRESIDENT.

Reviews.

PROBLEMS IN TUBERCULOSIS.

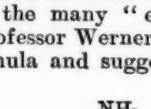
IN *Problems in Tuberculosis*[1] Sir JAMES FOWLER follows up the success of his larger work on *Pulmonary Tuberculosis*, reviewed in our columns at the time (1921, ii, 599), by a consideration of some questions connected with the administrative side of the tuberculosis problem, and with the gracious courtesy of a senior dedicates it to Dr. P. C. Varrier-Jones of the Papworth Hall Colony and Village Settlement, in appreciation of his work. The solution of some of the great difficulties of the tuberculosis problem is shown to be the gradual transformation of the existing sanatoriums into settlements on the lines adopted at Papworth; this will require endowment, State or other; "The country has to maintain small-pox hospitals because it will not enforce vaccination, and it will have to maintain tuberculosis settlements until it rebuilds its slums." This is an aphorism which it would perhaps be unkind to commend to the attention of the Minister of Health. The organization of such a settlement is described with much wise advice as to the nature of employment that should be arranged for the convalescents.

On the all-important subject of diagnosis Sir James makes some very important observations; while there is no trustworthy evidence that pulmonary tuberculosis is now detected at an earlier stage than it was formerly, it is often (in from 60 to 75 per cent. of the cases) diagnosed erroneously. Here he is supported by Dr. E. Rist's statistics from France (vide BRITISH MEDICAL JOURNAL, 1922, ii, 733), chronic bronchitis very commonly being the real disease. Among the reasons for this vast error are the absence of cases of pulmonary tuberculosis from the wards of general hospitals, and the increasing tendency to transfer the responsibility of diagnosis to radiographers who have not always the training in morbid anatomy necessary to enable them to correlate rightly the *x*-ray appearances with the structural changes. He advocates a school for the training of the future directors of sanatoriums, and considers a diploma in tuberculosis just as necessary for those who are to treat that disease as is a diploma in tropical medicine for those responsible for the care of tropical diseases. Throughout this attractively written book there are scattered *obiter dicta* which, as those in his last work appeared to him to be useful to the reviewers, have now been considerately collected at the end of the volume. His numerous readers will be glad to learn that they may look forward to a further volume from Sir James Fowler, dealing with bovine tuberculosis in man, or, as he prefers to call it, para-tuberculosis.

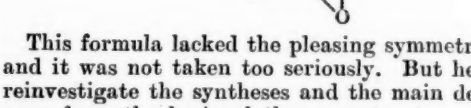
UREA.

The Chemistry of Urea,[2] by Professor EMIL WERNER, is the latest addition to the well known series of biochemical monographs edited by Professors Plimmer and Hopkins. These little grey books have won a high place in the esteem of all those interested in biological problems, and any addition to their number is received with interest. Most of these—each from the pen of a master of research in some particular field—present a critical analysis of the trend of work in a large subject and are books of inestimable value; but there are monographs of another sort, of more limited scope but none the less valuable and having a charm of their own. These are those in which the author is concerned with some restricted subject that he has made his own and in which he presents a measured verdict of his own work and relates the story of the steady march of his researches. Such a monograph is the one under review.

We have all been taught that urea is the amide of carbonic acid. We call it carbamide. The natural fermentation of urea and its artificial hydrolysis agree to produce carbon dioxide and ammonia, do they not? What could be simpler? And from the synthetic side much confirmatory evidence is surely available? Of course, the reactions of urea never quite fitted in with those of an amide but we were content to put these among the many "exceptions" in organic chemistry. Not so Professor Werner: in 1913 he challenged the conventional formula and suggested instead the cyclic structure:



This formula lacked the pleasing symmetry of carbamide, and it was not taken too seriously. But he set to work to reinvestigate the syntheses and the main decompositions of urea from the basis of the new structure. In this monograph we are given the history of this research and watch the results grow steadily into what must be conceded to be a very formidable argument. We would direct the attention of the compilers of textbooks to his book that they may make a few notes for their next edition. We might be content to leave the problem to the organic chemist satisfied with the knowledge that physiologically urea means ammonia and carbon dioxide *minus* a molecule of water. But the author will not have this at all. He finds that all the syntheses of urea, including Wohler's historical reaction, may be expressed as the union of ammonia with cyanic acid in its keto form:



This immediately brings urea into relation with ammonium salts in general and makes cyanic acid the most significant decomposition product. Serious consideration must, therefore, be given to the latter in relation to protein anabolism and katabolism. The researches of Fosse and others have shown that urea has a very wide natural distribution, even down to the lowest plant forms, so that a larger place may yet have to be ceded to it in any general plan of nitrogen metabolism, and we must be prepared to study therefore the claims of cyanic acid also.

A series of simple lecture experiments to demonstrate his views have been included in this fascinating monograph, which is completed by two appendices and an extensive bibliography. The first appendix is a critical survey of the proved methods for the detection and estimation of urea and full details are given, the second includes a brief discussion of the fixation of nitrogen as urea. Atmospheric nitrogen can now be economically converted into ammonia and the latter is at present fixed as ammonium sulphate. The possibility of fixing it instead as urea is attractive, for the latter contains nearly 50 per cent. of nitrogen and is an ideal source of this element for all plant life. The chemist would then have achieved one more step in the economic reversal of the cycle of nature.

A NATIONAL HEALTH POLICY.

DR. HARRY ROBERTS of Stepney, before the advent of the Insurance Act, practised medicine in East London. Under the Act he and his partners have, he believes, one of the largest insurance practices in England, and it is matter for congratulation that such a man has had the inclination and possesses the literary skill to set forth his views on a *National Health Policy*.[3]

Dr. Roberts emphasizes his agreement with the report of the Consultative Council of the Scottish Board of Health, especially, we take it, because of its recommendation that "the organization of the health service of the nation should be based upon the family as the normal unit and on the family doctor as the normal medical attendant and guardian." As regards allegations of medical carelessness, he makes no attempt to defend the indefensible, but remarks: "After all, panel doctors are the same individuals as those known as general practitioners before the Insurance Act came into being. Those who neglect their duties now neglected their duties then, but no political

[1] *Problems in Tuberculosis: Administration, Diagnosis, Employment, Settlements.* By Sir James Kingston Fowler, K.C.V.O., C.M.G, M.D. Oxford Medical Publications. London: Henry Frowde, and Hodder and Stoughton. 1923. (Demy 8vo, pp. ix + 64. 5s. net.)

[2] *The Chemistry of Urea.* By E. A. Werner, M.A., Sc.D., F.I.C. Monographs on Biochemistry. London: Longmans, Green and Co. 1923. (Roy. 8vo; pp. xii + 212. 14s. net.)

[3] *A National Health Policy.* By Harry Roberts. The Labour Publishing Company, 38, Great Ormond Street. 1923. (Crown 8vo, pp. 123. 3s. 6d.)

question being involved we heard less about it." Further, he holds that "the greatest fault of 'panel doctoring' lies in a quality which it shares with 'private' medical practice—the necessity which the doctor feels of pandering to the ignorance and superstition of his patients." This, Dr. Roberts says, is specially illustrated in the prescribing of drugs. He believes that "nine out of every ten bottles of medicine prescribed are entirely useless to the persons taking them, and are known to be useless by the doctors who prescribe them," but "patients, almost without exception, . . . insist on their bottle of medicine, and if one doctor will not give it they go to one who will." This, he urges, "is the dilemma which usually confronts the doctor," but after all he can "console himself with the knowledge that his medicine need be nothing more than a harmless placebo," and "he can accompany it with some good advice which without it would fall on deaf ears." No doubt the demand for and prescribing of drugs varies in different parts of the country, and while the problem is a general one it is probably most acute in an area like the east of London. Dr. Roberts ends his chapter on the panel system by declaring his objection to a State-controlled medical service. He also criticizes the attitude of Mr. and Mrs. Sidney Webb, who, "whilst recognizing the advantages of a free choice of doctors, propose to limit the privilege to the 'well-to-do'"; he expresses the hope that if ever the Labour party gets into power "it will tolerate no official medical service that is not the best available and equally for the use of every citizen of the country."

In a brief chapter on "Doctoring the Healthy" he records approval of "regular periodic examination of every man, woman, and child in the country who has no 'conscientious objection' to being seen by his doctor." That was a recommendation made to the Royal Commission on the Poor Law by its medical investigator, but objected to by that body lest it should result in hypochondriasis among those so examined. Dr. Roberts points out that in America there is now a rapidly growing movement in favour of such a system.

We have called attention only to parts of the essay which are of special interest at the present time, but the whole book is well worth perusal. Obviously the views expressed have a controversial aspect, but even where they may be found most open to dissent the vigour and frankness with which they are stated make the book interesting from beginning to end.

MICROSCOPICAL EXAMINATION OF FOODS AND DRUGS.

VEGETABLE microscopy applied to the recognition of materials for dietetic and medicinal use is a field in which among English workers Mr. GREENISH stands almost alone. Textbooks on the examination of foods usually give illustrations of the microscopic appearances of a few articles, such as pepper, coffee, and arrowroot, but the number of substances so noticed is seldom adequate, and little or no attention is given to methods of preparation or to the botanical relationships of the constituents. Work in this branch of technology has had a tendency to become individualistic, each worker exploring for himself to find suitable schemes of preparatory treatment. A volume such as *The Microscopical Examination of Foods and Drugs*, now in its third edition,[4] meets a real need; it is exceptional, if not unique, in providing systematic tuition in methods of preparation and guidance to the recognition of distinctive features.

The volume deals more especially with the methods applicable to the types covered by such headings as roots, stems, barks, leaves, seeds, etc. The fact that it gives under this system of treatment complete descriptions of important officinal products from seventy different plants will serve to indicate that it is a worker's as well as a learner's manual. In every instance the methods recommended have survived the test of experience. The subjects are very well illustrated by drawings which give views of prepared sections of tissues and also of the appearances in the powdered state. The illustrations do not form a complete atlas of vegetable histology; that requisite is furnished in another work by the same author. A useful chapter on adulterants completes a very satisfactory volume.

[4] *The Microscopical Examination of Foods and Drugs.* By H. G. Greenish, F.I.C., F.L.S. Third edition. London: J. and A. Churchill. 1923. (Demy 8vo, pp. 386; 209 figures. 18s. net.)

AN AMERICAN TEXTBOOK OF PSYCHOLOGY.

PROFESSOR KNIGHT DUNLAP, who is one of the leading experimental psychologists in America, has written an introductory textbook for college students entitled *The Elements of Scientific Psychology*.[5] The author departs from many of the traditional formulae and conceptions of the older psychology, and insists on the necessity of submitting all working hypotheses to experimental tests and of rigidly defining psychological terms. He is an opponent of introspection as the term is generally understood, and considers that "it should be exclusively used to indicate alterations of one's own body through the visceral and somatic senses" (p. 28). It is difficult to understand how all the data discovered by introspection can be included under this definition. A visual hallucination, for instance, would appear to include purely mental content in addition to the kinaesthetic sensations which, no doubt, comprise part of the total experience. Professor Dunlap's treatment of thought and thought content contains much of interest to psychologists, but he tends somewhat unconvincingly to "explain away" the existence of the image by emphasizing the kinaesthetic processes or muscular content of thought. A considerable section of the book is devoted to sense perception, and a chapter is reserved for an account of the anatomical and physiological mechanisms involved in behaviour.

The book is not elementary and it will be found most serviceable by the advanced student of psychology. The publishers are to be congratulated on producing a volume which it is a pleasure to read and handle.

THE WORKMEN'S COMPENSATION ACT.

REVISION of the Workmen's Compensation Act appears likely at no very distant date. In May, 1919, the Home Office appointed a committee to inquire into the working of the present Act, to consider the question of establishing a national system of insurance against accidents, and to report what alterations in the law appear desirable. The report of the Committee was issued in July, 1920, and in May, 1922, a motion was made in the House of Commons calling upon the Government to introduce a bill to amend the Workmen's Compensation Act, 1906. The Home Secretary promised to discuss the possible lines of an agreed measure with representatives of employers and trade unions. In view of these facts the appearance of a work which sets forth as simply as possible a statement of the existing laws, an account of their working, and the problems they give rise to, is opportune. Mr. Joseph Cohen's *Workmen's Compensation in Great Britain*[6] is such a book. Of handy size, it should be of service to employers, trade union officials, law students, and those interested in social problems. Perhaps of most interest to medical men is the chapter dealing with reduction of accidents. We learn that in recent years the British Industrial "Safety First" Association has proved a valuable adjunct to the Factory Acts, by making and considering suggestions for reducing risk, and impressing upon workers the need for care and attention. Tables show that accidents have been reduced by 16 to 75 per cent. in different industries. In 1907, the number of accidents at Port Sunlight reported to the Home Office was 25 per 1,000 employees; in 1920 the figure had fallen to 7.8. Mr Cohen does not discuss the proposal which has been so frequently advocated by medical men who have had much experience of the working of the Act—namely, that steps should be taken to settle more cases by reference to medical authority, and that greater use should be made of medical referees sitting as assessors. Nevertho-

[5] *The Elements of Scientific Psychology.* By Knight Dunlap, Professor of Experimental Psychology in the Johns Hopkins University, Baltimore. London: Henry Kimpton. 1922. (Sup. royal 8vo, pp. 368; 31 illustrations 18s. net.)

[6] *Workmen's Compensation in Great Britain.* By J. L. Cohen, M.A.Cantab., F.S.S. London: *Post Magazine*, 9, St. Andrew Street, E.C.4. 1923. (Cr. 8vo, pp. 232. 6s.; post free 6s. 4d.)

less, the chapter on suggested reforms will be read with interest, and the book can be cordially recommended as a useful synopsis of the Workmen's Compensation Act and its working.

ZOOLOGY.

BUT a short time ago the student and teacher of elementary zoology were alike confronted with the difficulty of finding a textbook suitable to their requirements. Now the difficulty is to select one, out of very many, which most nearly meets their requirements. Professor MEEK's *Essentials of Zoology*[7] caters for the medical and science student who is beginning the study of zoology. It seems remarkable that there should be a sufficient demand for so many elementary books on the subject, for while each may incorporate descriptions of "types" not included in others, still of necessity the anatomy of many—for example, frog and rabbit among vertebrates—is common to them all.

The distinctive character of Professor Meek's book is the inclusion of such forms as *Blatta*, *Taenia*, and *Distoma;* this is useful. A classification of the phylum is given at the commencement of each chapter dealing with a particular "type." This is a doubtful advantage. Schemes of classification differ, often widely, from one another, and are the cause of much confusion to the beginner. Moreover, to make the classification even moderately complete the author is compelled to introduce a number of terms like *Eurypteridae*, *Prototracheata*, etc., without any mention of the kind of animals to which they refer; to do so would too greatly enlarge the scope of the book. The anatomical descriptions are clear, and the book is both reliable and readable; there are numerous illustrations, though they are not always very good.

NOTES ON BOOKS.

DR. A. W. FULLER, in his small book on *Anaemia*,[8] insists on the frequency of simple anaemia among countless numbers who are neither aware of it themselves nor are informed of what is really the matter by those whom they consult for other complaints. The treatment recommended is hypodermic injection of iron, arsenic, and strychnine in isotonic serum, the last addition rendering the injection painless. During the last two years the author has given 2,000 such injections. Stress is laid on the importance of rheumatism in the causation of this simple anaemia, and on the advisability of commencing the treatment of such cases with salicylate of sodium. The medical reader will not, we fear, get much information of value from this elementary work.

Dr. WALTER LIBBY'S pleasantly written *History of Medicine in its Salient Features*[9] is based on his lectures to third-year students in one of the American schools of medicine, and is therefore not an exhaustive so much as a general introduction to the history of medical science and art. In twenty chapters the ground from the dawn of medicine in Egypt and Babylonia to medical science and modern warfare, as illustrated by the world war of 1914–18, is covered, and there is a pleasant biographical flavour conveyed by the short sketches of the makers of medical milestones; for example, in the chapter on "Harvey and the Revival of Physiology" and in that entitled "Science and Practice," in which the question where the physician's attention should be focused is illustrated by the lives of Sydenham and Boerhaave. For renal disease the British Hippocrates recommended various mineral springs, and among them those of the London suburb now known by his name. The chapter on the cell theory rightly contains an analysis of Virchow's achievements, and attention is directed to his doctrine of embolism, which is described as perhaps his greatest triumph. In the account of "the founders of bacteriology" Spallanzani's experiments in connexion with spontaneous generation are summarized, and lead on to Pasteur's work, and so to the chapter on antiseptic surgery, which contains a portrait of Lister and W. E. Henley's fine lines to "The Chief."

[7] *Essentials of Zoology for Students and First Year Students of Science.* By A. Meek, D.Sc. London: Longmans, Green and Co. 1922. (Demy 8vo, pp. xii + 325; 145 figures. 10s. 6d. net.)

[8] *Anaemia, its Causes and Modern Treatment, with a chapter on Neurasthenia.* By Arthur W. Fuller, M.D.Edin. London: H. K. Lewis and Co., Ltd. 1923. (Cr. 8vo, pp. vi+64. 3s. 6d.)

[9] *The History of Medicine in its Salient Features.* By Walter Libby, M.A., Ph.D. London, Bombay, and Sydney: Constable and Co., Ltd. 1923. (Demy 8vo, pp. xi + 427; 9 plates. 15s.)

The volume entitled *The New Constitution of India*[10] contains two courses of Rhodes lectures; one of three, by Sir COURTENAY ILBERT, deals with the general principles which guided the framers of the constitution; the other, also of three, by Lord MESTON, is more particularly devoted to the workings of the new constitution, and traces the growth of the movement which preceded the change. In appendices are given lists of central and transferred subjects, and the text of the instructions from the Crown to the governors of provinces. Neither writer seems to have given any attention to the preservation of health and the prevention of disease.

The new number of *Brain*,[11] which is the first part of vol. xlvi, contains papers by Dr. F. M. R. Walshe, neurologist to the medical unit, University College Hospital, on postural reflexes in hemiplegia and associated movements, by Drs. Adie and Greenfield on dystrophia myotonia, and on iron in the brain by Dr. A. Gans, from the laboratory of a provincial hospital in Holland.

The International Labour Office at Geneva has published the first number of a *Bibliography of Industrial Hygiene*, which is intended to be a quarterly publication. Most of the writing on industrial medicine appears in current medical and industrial periodical literature, and such a bibliography of the scattered references to the subject should prove very valuable. The references are grouped under the headings of industrial hygiene, industries, hygiene of the worker, physiology, and pathology, and each group has many subdivisions. The subject headings are given in English, French, and German, and the titles of the articles in the original language.

C.M.B. Examination Questions and Model Answers[12] is a handbook which, in addition to giving model answers (reprinted from the *Nursing Mirror*) to questions set at recent examinations of the Central Midwives Board, includes a note on how to become a certified midwife, a list of institutions, homes, and midwives by whom pupil midwives may be trained, and an abridged list of the rules of the Central Midwives Board.

The Michelin Guide to Great Britain, 1923, retains all the well known and most useful features of previous issues. There is a section on the numbering of roads recently introduced into this country. The maps are retained, as also the plans of towns. On the back of one of the plans there are some striking illustrations of experiments made in France which prove to how great an extent solid tyres ruin the roads.

[10] *The New Constitution of India.* Being three Rhodes Lectures by Sir C. Ilbert and three by Right Hon. Lord Meston. Delivered at University of London, University College, session 1921–22. 1923. London: University of London Press, Ltd. (Cr. 8vo, pp. 212. 5s. net.)

[11] London: Macmillan and Co. (6s. a part; 24s. a year.)

[12] *C.M.B. Examination Questions and Model Answers.* London: The Scientific Press, Ltd. 1922. (Fcap. 16mo, pp. 125. 1s. 6d. net, 1s. 8d. post free.)

THE STUDY OF VENEREAL DISEASE IN SCANDINAVIA.

THE transactions of the fifth meeting of the Northern Dermatological Society in Stockholm in June, 1922, have now been published in English, French, or German in *Acta Dermato-Venereologica* (vol. iii, fasc. 3-4). Of the twenty-eight original papers about half deal exclusively or principally with venereal disease. The standard of most of these papers is remarkably high, and they give a useful summary of the observations and opinions of the leading Scandinavian specialists in venereal disease.

GONORRHOEA.

In Female Children.

Dr. H. I. Schlasberg reports the results on 146 girls between the ages of 1 and 11 years, treated in hospital for gonorrhoea during the period 1912-20. In 106 cases the vagina and urethra were infected, in 11 only the vagina, and in 29 the vagina, urethra, and rectum. It is often said that gonorrhoea relapses in young girls because of neglected gonorrhoeal bartholinitis, but though Dr. Schlasberg saw many relapses he could not trace one to this cause. Another reason why relapses are so common is said to be extension of infection from the rectum to the vagina and adjacent parts. But though Dr. Schlasberg found gonorrhoea of the rectum required longer treatment than gonorrhoea of the neighbouring structures, he saw only three cases of relapsing gonorrhoeal proctitis out of

the 29 cases in which the rectum was involved. Among the 135 patients with gonorrhoea of the vagina and urethra, 81 relapsed after the completion of treatment. In many cases there was more than one relapse, and the site of the reappearance of the gonococci was always the same. Not until twenty successive bacteriological examinations had been made should success of any given treatment be claimed; a lower standard is bound to bring many disappointments. The cervix was found to be infected in several cases, but Dr. Schlasberg considered it inadvisable to attempt local treatment of the cervix; when gonorrhoea of the vagina is cured the disease of the cervix usually clears up.

Certification of Cure in Men.

Dr. Björling, who discussed the question, When can gonorrhoea in the male be certified as cured? maintained that a negative bacteriological examination is of little value when there is a persistent discharge from the male urethra. In 16 instances he has known the husband to infect his wife after being certified, on the strength of a negative bacteriological examination, as no longer infectious. Though a man suffering from so-called "sterile post-gonorrhoeal catarrh" may marry and his wife may not have acute gonorrhoea, yet many such women develop signs of chronic gonorrhoea months or years later. Dr. Björling considers that as long as there is a urethral discharge, with leucocyte threads in the urine, the patient cannot be certified as non-infectious even when provocative treatment has failed to produce gonococci. Only when the urine has been perfectly normal for a month after completion of treatment are there reasonable grounds for assuming recovery from the infection.

SYPHILIS.

Mercury and Salvarsan.

Dr. O. Jersild has made an interesting comparison of his salvarsan with his pre-salvarsan era patients. In his private practice he treated 200 patients with mercury alone before the salvarsan era, and only in 40 of these cases was there no sign of secondary eruptions during the first two years; the majority of the eruptions occurred during the first year. The second group of patients, numbering 169, were given salvarsan and mercury, and in only 19.5 per cent. of these cases did clinical relapses occur during the first two years. Dr. Jersild considers that syphilis may ultimately be extinguished by the suppression of the infectious stages of the disease by salvarsan.

Salvarsan Jaundice and Dermatoses.

The statistics given by Dr. W. Holland with regard to salvarsan jaundice and by Dr. N. Nander with regard to salvarsan dermatoses have one important point in common. Both authors state that they have observed these complications more frequently of late, and suggest that the fault may lie with the recent consignments of salvarsan they have used. As Dr. Nander found, the solubility of different samples varied greatly, and while some were greenish others were dark yellow. At the University Dermatological Hospital in Copenhagen in 1914 only one case of skin disorder was traced to salvarsan; in 1915 and 1916 there was not one and in 1917 and 1918 there were only 3 such cases. But in 1919 their number rose to 10, in 1920 and 1921 there were 10 such cases, and in 1922 there were 11. Dr. Holland's paper on salvarsan jaundice tells the same tale. The first case was not seen till November, 1919, whereas during 1920 and the first ten months of 1921 he saw as many as 14 cases. In 4 of these cases the salvarsan was given for primary syphilis with a negative Wassermann reaction, and it is held that in these cases, at any rate, the syphilis could not be responsible for the jaundice.

Abortive Treatment.

Another brace of papers deals with the abortive treatment of syphilis. The paper by Dr. U. Müllern-Aspegren (Sweden) is more optimistic than the paper by Dr. H. Boas (Denmark). The former has come to the conclusion that when patients have been clinically and serologically free for two years after the completion of a course of abortive treatment with salvarsan and mercury, they may, as a rule, be regarded as cured. Of 165 first-stage Wassermann-negative cases 141 were subsequently traced, and only 4 were found to have relapsed. In all 4 cases only two injections of salvarsan had been given. Of the 89 cases of syphilis in the first stage, in which the Wassermann reaction was positive, 81 were subsequently traced, and 8 were found to have relapsed. The inadequacy of the dose was thought to be chiefly to blame. This author has known only one case of relapse to occur more than a year after the completion of a full course of abortive treatment, and in this the reappearance of the disease may have been due to reinfection and not to relapse. Dr. Boas, on the other hand, states that even when a course of abortive treatment has been carried out under apparently ideal conditions, a relapse may occur even after as long an interval as seven years or more. A comparison of these papers suggests that the best system of dosage of salvarsan and mercury may not yet have been ascertained, and it is worth noting that Dr. Müllern-Aspegren gave as many injections of salvarsan after the Wassermann reaction had become definitely negative as he gave before. He advocates a minimum of eight injections of salvarsan, to be supplemented by fifteen to twenty injections of mercury. He has not had a serious salvarsan accident.

Syphilis and Marriage.

Dr. J. Strandberg deals with 250 marriages or equivalent unions in which one or both parties suffered from syphilis. His paper is so full of statistical tables representing various methods of grouping his material that it is rather difficult to see the wood for the trees. A point which he emphasizes is the great danger to the progeny when the mother, and not the father, was the first to contract syphilis. Of 19 women who were the first to be infected, as many as 18 passed the disease on to their progeny. On the other hand, among 18 marriages in which the husband was the first to be infected, only one yielded syphilitic progeny. In view of this and similar experiences, Dr. Strandberg insists that, in the matter of giving consent to marriage, doctors should enforce a more rigorous standard for women than for men. Provided the husband does not infect the wife there may be little danger to the progeny. But the wife may have long ceased to be infectious to the husband, and yet be capable of bearing syphilitic progeny. Another of Dr. Strandberg's conclusions is that many of the 250 unions were sterile owing largely to the use of contraceptive devices, the original object of which was to prevent transmission of the disease from one partner to the other.

Prevention by Salvarsan.

Dr. Karl Heden has treated with salvarsan twenty persons cohabiting with patients suffering from syphilis in an infectious stage; in none did signs of syphilis appear in spite of exposure to infection. In two cases this prophylactic treatment was instituted three weeks after coitus with a syphilitic patient; in the remaining cases the interval was two to thirteen days. In another series of thirty-six persons exposed to infection in the same manner, but not given prophylactic treatment, only six persons escaped infection.

The Bismuth Treatment.

Dr. Karl Marcus, of the St. Göran Hospital (Sweden), has treated 35 cases of syphilis with bismuth according to the method described in this JOURNAL (vol. i, 1922, p. 443). Marcus used the French proprietary trepol or a 10 per cent. emulsion of bismuth salicylate prepared by the hospital's chemist. Both preparations were given by intragluteal injection, seven to eight doses being given in each case. The clinical results were, on the whole, very satisfactory, and in the comparatively short observation period there were no relapses. Dr. Marcus concludes that intramuscular injections of bismuth are at least as effective as the mercurial and arsenical preparations, and bismuth seems to have the advantage of being comparatively non-toxic. Among 11 cases of recent syphilis the average interval required to make the Wassermann reaction negative was thirty-seven days, whereas for the 17 cases of secondary syphilis it was, on the average, as long as sixty-two days.

British Medical Journal.

SATURDAY, JUNE 16TH, 1923.

THE VENEREAL DISEASE REPORT.

IN presenting to our readers last week the report of the Committee on Venereal Disease, over which Lord Trevethin, lately Lord Chief Justice of England, presided, we transposed the signatures to the beginning, thereby emphasizing the fact that it was signed by all those who served on it. The Committee owed its existence to the initiative of Lord Dawson of Penn. By the publication of this report an unedifying wrangle between two bodies, upon both of which the medical profession was largely represented, ought to be brought to an end. The *Times* has called it "a treaty of peace between the two factions"; the word "faction" is severe, but we are not prepared to say that it is too severe. Any individual or organization that seeks to revive the squabble will deserve, and will, we believe, receive, the reprobation both of the public and of the medical profession. The National Council for Combating Venereal Diseases has accepted the report "as a document that can bring together all persons of good will in efforts to reduce venereal diseases," and we observe that the honorary secretary of the Society for the Prevention of Venereal Disease considers that the report should make co-operation between the two societies possible.

To assert that the moral and ethical questions have not been judged differently by individual members of the profession, as by members of the community in general, would imply blindness to obvious facts, but one good result of Lord Dawson's action has been to separate out an aspect of the matter with which members of the medical profession, by the nature of their calling, are specially concerned.

The great body of the medical profession has held aloof from the controversy, not because it was indifferent to the urgency of the problem, but for various good reasons. As we had to say in another connexion only a week or two ago, certain promises were being made in its name which it was not convinced could be fulfilled. It is one thing to bring evidence, as Metchnikoff did, that calomel cream, if thoroughly applied within a certain time after exposure, would prevent syphilis, and quite another, even if the evidence were accepted as conclusive, to be confident that in the actual conditions of promiscuous sexual intercourse the method would be efficacious. The instruction to the Committee "to consider and report upon the best medical measures for preventing venereal disease in the civil community" covered this, and the opinions it expresses are clear, though necessarily subject to several important qualifications. The Committee begins its consideration of this part of the subject with the statement that in the laboratory disinfectants will destroy the specific organism of both syphilis and gonorrhoea, and that a man who is thoroughly disinfected by disinfectants of appropriate strength and nature runs little risk of infection if this thorough disinfection is carried out within a short time after exposure. The Committee is also of opinion that though the chances in favour of success are greater in the case of skilled disinfection (by a "trained person"), yet "an intelligent man, if furnished with reasonable instructions, could in favourable conditions effectively disinfect himself." The Committee points out that in the opposite sex it is not possible to speak with so much confidence, and frankly states that "it is extremely difficult for a woman to disinfect herself, and that the prospects of success for disinfection by another person, however skilful, are in the case of a woman less than in the case of a man."

These conclusions will, we believe, be accepted as medically sound, but, as the Committee admits, they do not carry us very far in determining the other question which nearly concerns the medical profession—the question whether it is advisable to introduce any system or measures for affording to the general public facilities for disinfection. The evidence before the Committee has led it to the opinion that the success of any such general facilities is likely to be small, but in view of its earlier conclusion—that disinfection in an individual, if properly and promptly effected, will in all probability be successful—it expresses the view that there is no "justification for putting obstacles in the way of individuals who desire to procure the necessary disinfectants." This leads it to recommend that the Venereal Diseases Act, 1917, should be amended so as to permit "properly qualified chemists to sell *ad hoc* disinfectants, provided such disinfectants are sold in a form approved and with instructions for use approved by some competent authority." The suggestion that such disinfectants should be freely sold by pharmaceutical chemists follows naturally, but the consequences of this relaxation of the law will have to be carefully considered. The proposed alteration would maintain the prohibition of commercial advertisements, and this condition seems to us to be essential if the other suggestion is to be approved by the medical profession. Granted so much, the difficulty arises of finding an authority to approve the disinfectant and the instructions to be issued with it. The Committee suggests the Medical Research Council. At first sight, at any rate, we find it difficult to see how such work comes within the scope of the Council; it might properly be invited to advise on the efficacy of disinfectants now in use or of others which may be introduced; it is, however, not a laboratory standardization that is wanted, but a practical method which will work in real life. Failing the Medical Research Council it is not easy to think of any existing official body which could draft a prescription and the instructions by which the disinfectant is to be accompanied, unless it be the Consultative Council on Medical and Allied Services; but the Ministry of Health might well hesitate before taking the responsibility involved, more especially as such official approval—however cautious and qualified its terms—would almost certainly be interpreted by the uneducated public as an official guarantee. The difficulty is very real, and is one on which the medical profession may properly have something to say.

The Committee expresses a feeling very widely shared in the medical profession when it decides against any system of general notification of venereal disease. But in the two following paragraphs dealing with "modified" notification, the Committee has not set out a complete scheme for conditional notification which has a certain amount of support. Any measures taken under this scheme would not be confined to patients at clinics only, but would be applicable also to every person who comes under treatment; it would provide that no notification what-

soever should take place unless the infected person had ceased attendance for treatment, and had neglected warnings given by his doctor, and that then, and then only, should he be notified to the medical officer of health, who should again warn him, and only resort to prosecution in the case of recalcitrants. This is the form of "conditional" notification which, we understand, is in force in the Dominions, and which the Committee of the New Zealand Board of Health has unanimously recommended for introduction into New Zealand. Whether any form of notification would cause concealment and a diminution in the number of those coming for treatment is a matter of opinion. The almost unanimous belief of the health officers in Canada and Australia is that it in no way diminishes the number of those who come for treatment. There is no doubt, however, that no form of notification can be introduced into Great Britain until both public opinion and the opinion of the medical profession are in its favour. The replies to the questions sent down to the Divisions by the Council of the British Medical Association[1] show plainly that in the general view of the profession notification is impracticable under present-day conditions.

The recommendations in paragraph 23 and succeeding paragraphs speak for themselves; in particular we note the recommendations for ante-natal treatment. With regard to the instruction of nurses and midwives in venereal disease, a letter appears this week in our correspondence columns from the secretary of the Central Midwives Board for England and Wales.

The Committee does not recommend the establishment at the public expense, save in exceptional cases, such as seaport towns, of a system either for self-disinfection or skilled disinfection, but considers that where public money is available it may be better expended on the treatment of disease and the education of the community, and on the elimination of those conditions of life which tend to foster spread of the disease. It is to be hoped that this strong expression in favour of continuous education will aid the strenuous campaign to impart knowledge and give instruction which has been carried on for the last seven years.

The conclusions arrived at in this report will be read with deep interest by everyone concerned in the problem of combating venereal disease. It seems to provide a starting point for work towards the common goal of reducing the incidence of this disease to negligible proportions, and should it, as it ought, be the means of ending unfortunate controversies which have so prejudicially affected the campaign against this disease in the near past, the Committee will indeed have earned the gratitude not only of the medical profession, but of all those interested in the welfare of the individual, the community, and the State.

[1] SUPPLEMENT, April 28th, 1923, p. 160.

THE PHYSIOLOGY OF THE ADRENAL SECRETION.

THE suprarenal medulla has for long been generally considered the typical example of an organ of internal secretion, and it is frequently adduced as the endocrine gland concerning whose functions our knowledge is most complete. In recent years, however, an acute controversy has been proceeding in physiological journals concerning the importance of adrenaline secretion, and numerous workers have denied that it is of any importance in normal physiology.

Professor E. Gley[1] has recently written a most interesting summary of the history of our knowledge of the functions of the suprarenal glands. He recognizes three periods: in the first the importance of the suprarenal glands was established; in the second adrenaline was discovered and its pharmacology was fully worked out; during this period the pharmacological action of adrenaline was rather rashly assumed to give an indication of the physiological action of the suprarenal glands—but we are now in a third period, which is one of doubt and uncertainty.

Brown-Séquard, as early as 1855, demonstrated the lethal effects of adrenalectomy, but the possibility of sepsis was held to render his results doubtful. Between 1893 and 1897 Langlois, however, conclusively proved that extirpation of the suprarenals rapidly caused death, but showed at the same time that administration of extracts of the suprarenals did not prevent death. As Gley says, "twenty-five years have passed since then, in the course of which many similar therapeutic attempts have been made, but there is not much to alter in the conclusions of Langlois." At about the same time, in 1895, Oliver and Schafer demonstrated the potent pharmacological action of suprarenal extracts, and this discovery was followed by the isolation of adrenaline, and thereafter all the wonderful pharmacological actions of this substance were explored. Gley suggests that these striking properties allured the investigators away from true physiology into pharmacology. It was generally assumed that the adrenaline secreted by the suprarenal glands produced the same effects in the body as those observed to follow the injection of adrenaline. The secretion of adrenaline was supposed to maintain normal arterial tonus, and Cannon elaborated the attractive theory that visceral changes attending emotions were produced, or at any rate reinforced, by the liberation of adrenaline. The third period, in which we now are, is one of criticism and doubt, and it has come to be realized that we have very little certain evidence as to the part played by the suprarenal medulla in normal physiology.

Gley's first conclusion is that adrenaline is not necessary for the normal functioning of the sympathetic nervous system; it has been shown that in animals from whom the adrenals have been removed the principal functions of the splanchnic nerve are manifested normally, and that asphyxia, which excites all the vaso-constrictor apparatus, produces its normal effects. His second conclusion is that adrenaline is not necessary for the maintenance of normal life. If one suprarenal be excised and the other denervated, though the animal is either deprived of adrenaline secretion or only minimal quantities pass into the blood, yet it remains alive and in perfect health, and presents all normal nervous reactions. These conclusions appear to be supported by the majority of recent investigators in this subject; furthermore, it is agreed that if the splanchnics are stimulated the suprarenal glands can excrete into the blood sufficient adrenaline to produce definite physiological effects, but it is also agreed by most workers that there is little evidence that the adrenaline secreted by an animal in a tranquil condition is sufficient to produce any definite physiological effect. Controversy at present centres chiefly round the question as to what stimuli are adequate to produce an adrenaline secretion sufficient to produce any effect in the body.

[1] *Revue de Médecine*, xl, 193 (1923).

Gley's conclusions do not meet with universal acceptance, and in the same issue of the journal that contains his article is a paper by Tournade and Chabrol[2] giving an account of elaborate and ingenious experiments upon animals with crossed circulations. They consider that they have proved that the adrenaline liberated by the suprarenal medulla, even without splanchnic stimulation, is sufficient to produce definite effects upon the blood pressure of an animal deprived of its adrenal glands. This experiment appears, however, a little inconclusive, for the fall of blood pressure after adrenalectomy is supposed to be due to lack of the adrenal cortex, and the effects might well be due to some internal secretion of the cortex. If this were so it would if anything increase the importance of the result, for our knowledge of the suprarenal cortex is even in a more unsatisfactory state than our knowledge of the medulla. We do not really know what is the function of the adrenal medulla, although we have a full knowledge of the nature of its internal secretion; as regards the cortex, we know that it is absolutely essential to life, but nevertheless do not know for certain whether it produces any internal secretion, for it is quite conceivable that it acts solely as a detoxicating organ.

THE CONFERENCE OF PANEL COMMITTEES.

THE Special Conference of Local Medical and Panel Committees which was held last week, and a full report of which appears in the SUPPLEMENT to this issue, was of great importance because, although by the nature of the circumstances it could not come to any final decisions upon the terms of service for insurance practitioners from the end of this year, it affirmed the general policy which was to be pursued, and settled the lines on which the necessary negotiations are to proceed. This was the main purpose for which the Special Conference was called. The Insurance Acts Committee can now pursue its conversations with the Government with a clear indication as to how far the representatives of insurance practitioners are prepared to accept certain alterations of the terms of service that have been suggested. The results of these conversations, together with the proposals as to remuneration, will be presented to the Annual Conference, which should be held late in September or in October, and a final decision upon them will then be taken. Meanwhile, the Annual Representative Meeting at Portsmouth will have an opportunity, if desired, of considering such of the proposals as may be held to affect the profession outside the insurance service.

The important memorandum on the National Health Insurance Fund, which was published in the SUPPLEMENT of May 26th last, and upon which we commented at that time, was received by the Conference. Its bearing upon the question of remuneration was fully appreciated, but there was no detailed discussion upon the capitation rate of payment. Such discussion would have been premature and not helpful at this stage. It was significantly resolved, however, "that the full cost of remuneration of insurance practitioners, determined on the merits of the case, should be borne by the Fund, and that practitioners should not be placed in regard to any portion of their remuneration in the position of residuary beneficiaries after all other charges have been met"; and "that any rate of remuneration lower than that given as the result of the 1920 arbitration is less than adequate for the service rendered." A capitation rate of eleven shillings was then awarded as a result of a full and impartial skilled investigation. Any changes which have since occurred, such as the somewhat lessened devaluation of money, tending to justify any lower rate, may clearly be held to be counterbalanced by other circumstances, such as some of the improvements and widenings of the service now suggested.

The Insurance Acts Committee has undoubtedly acted wisely in trying to meet all the criticisms that have honestly, though sometimes on mistaken premisses, been levelled at the present service, even though in doing so it has gone beyond the official requests from the Ministry of Health; and the Conference showed equal wisdom is endorsing this action. Apart from some minor but important suggestions for dealing with inadequate surgery accommodation and for improving facilities for consultation, the three main proposals are that insured persons should be free to change from one doctor to another at any time; that there should be some further limitation in the number of persons for whom a doctor carrying on practice single-handed may accept liability, save in exceptional circumstances already proved to exist; and that there should be a restatement of the range of service contracted for, together with some alteration of the machinery for determining that a particular form of treatment is outside that range and so may legitimately be charged for. None of these things is free from difficulty—logical, administrative, technical, or practical—but the conditions which they are designed to remedy have been the subject of frequent and sometimes justifiable complaint, and may in particular circumstances bring considerable discredit upon the service. It is eminently desirable that no unnecessary restriction should be placed upon the free choice of doctor by patient, but care will have to be taken to prevent undue or improper influence being used to affect such choice. It is desirable, too, to minimize any temptation for a practitioner to assume liabilities which he is unable properly to meet, and to discourage practitioners from becoming wholly insurance practitioners without the wider experience of more general professional work; but in districts where the proportion of insured persons to the total population is very large there may be a danger of placing too severe a limit on a doctor's opportunities. Further, it is not in the interest either of the profession or of the public to narrow the scope of treatment described as "such as can consistently with the best interests of the patient be properly undertaken by a general practitioner of ordinary competence and skill." This scope is nowadays very wide; and it will be an advantage if there can be such a restatement of the insurance practitioner's duties as will secure for insured persons free of charge in every area all that ought to be included within the above description, while at the same time definitely excluding such services, and such services only, as should not be undertaken, except in case of urgent necessity, by practitioners without special training and experience. Whatever may be the exact form in which all these proposals emerge from the negotiations with the Ministry, they must be recognized as a sincere and generous offer on the part of the profession, and they ought to silence some of the commoner allegations made against the insurance medical service.

Apart from these very important suggestions to meet criticisms of the service from outside, the principal requests made by the Insurance Acts Committee and endorsed by the Conference on behalf of insurance

[2] Tournade and Chabrel: *Revue de Médecine*, xl, 222.

practitioners are: that the certification system shall be made more simple, especially by reducing the number of certification forms, and by a removal of the obligation to give certificates to insured persons not under the practitioner's own treatment; that special provision shall be made for rural practitioners in sparsely populated districts; that any terms agreed upon shall be secured for at least five years; and that increased diagnostic facilities of a special character shall be provided for insured persons, the method of provision and administration of such an extension of service and of the present "additional benefits" being made the subject of careful consideration. All these are of very considerable importance, and the last of them is obviously of great interest to the whole profession.

Another subject to which the Conference gave attention was the much misused phrase "unity of the profession." This was dealt with in the resolutions put forward by the Insurance Acts Committee and agreed to almost unanimously by the Conference. These resolutions expressed a strong desire for as great a degree of common action by the profession as possible in relation to National Health Insurance matters, and requested the Committee, within its constitution and powers, to co-operate as far as it effectively could with other medical organizations. They urged that the Committee should be made thoroughly representative of insurance practitioners in the way now recommended by the Council to the Representative Body, and asked for the fullest support for the National Insurance Defence Trust from all Panel Committees and practitioners. An amendment avowedly moved in the interest of a particular organization was defeated. It is to be hoped that the Conference will not be asked to go over this ground again. There probably always will be—and perhaps it is not altogether undesirable that there should be—a number of different organizations within the profession. They need not necessarily be antagonistic to one another. Even where their professional interests are not identical their actions can be harmonious, and in certain cases the British Medical Association has shown that amicable co-operation is possible over a long series of years. If certain practitioners prefer to organize themselves on technically trade union lines it is, of course, open to them to do so, though this does not differentiate them in any professional respect from other practitioners, and it is impossible to discover any basis for their claim that their particular political or economic views should secure for them special privileges in other organizations of the profession, or any reason for taking up the attitude that if such privileges are not granted they must maintain a continuous opposition. Common aims should ensure goodwill, and the Conference has indicated a line of policy in connexion with the revision of the terms of service for insurance practitioners upon which it should be possible for the whole profession to unite.

CO-OPERATION AMONG VOLUNTARY HOSPITALS.

SHEFFIELD has recently been filled with discussion on various aspects of the hospital question. Not only has the British Hospitals Association held its annual meeting in that city; reports have also reached us of meetings of the Sheffield and District Association of Hospital Contributors (otherwise the Sheffield hospitals' penny in the £ scheme), and of the Grand Lodge of the Sheffield Equalized Independent Druids. There seems to have been a general desire at all these meetings to retain the voluntary system of hospital management, while increasing the sources of financial support. Lord Onslow, chairman of the Voluntary Hospitals Commission, expressed the opinion that the problem of making ends meet, and that of extending hospital construction which had been in abeyance for the last ten years, would be met in part by co-operation between the hospitals and other organizations interested in the matter. He disliked subsidies; but spoke highly of the success of the efforts of the Joint Hospital Council in Sheffield in finding a new source of income. Apparently about £60,000 a year is contributed by employees under what is called the penny in the £ system; 1,879 firms in Sheffield co-operate in the scheme, the number of contributors being 154,000, with an additional 35,000 in outlying districts. The contributions of the employees are supplemented up to the amount of one-third by the employers. There seems to be some fear that the system may lessen charitable contributions, and in some cases large employers of labour, such as the City Corporation, have not yet seen their way to pay their contribution as employers. Mr. Bedford, chairman of the Board of Management of the Royal Infirmary, pointed out that the penny in the £ system did not do away with the need for charitable subscriptions. According to the Master Cutler, Mr. R. W. Matthews, the work of the Joint Hospitals Council is leading to the growth of the "hospital conscience" in Sheffield, and the Council appears to be a very active body. There are said to be 3,000 patients on the hospital waiting lists in Sheffield; and to help in meeting the deficiency in beds the Council has set up a method for providing convalescent treatment, nursing facilities, and after-care. A list of suitable convalescent homes has been compiled; firms contributing to the hospitals appear to be charged 10 per cent. on their contributions as convalescent payment; and not only patients from hospitals, but also persons in whom illness can be prevented by a stay in a convalescent home are sent to these institutions. For nursing there is an arrangement with the Queen Victoria Nursing Association, and efforts are made to follow up patients when they leave the hospital. At the British Hospitals Association meetings much was said about the middle-class patient and his need for hospital help, which it was said could be met only by extension of the present accommodation. It was thought that it would pay hospitals to make provision for paying patients. According to Mrs. Wilkinson, a Councillor of Sheffield, the system of payment would lead to a tendency to public control. But with regard to the contributory schemes in Sheffield, very little evidence as to the representation of contributors seems to have been given. Professor Arthur Hall, while emphasizing the necessity for equality of treatment in the wards, whether patients paid or not, expressed the opinion that payment had not as yet affected the spirit of hospitals, because the staff did not know who were paying. Professor Hall made the interesting remark that the British patient does not want to go into hospital; he would rather be treated at home; consequently an extension of district nursing would be of great help in relieving the pressure on hospitals. Mrs. Wilkinson, while admitting the need for more maternity beds, explained the reluctance of women to go into maternity hospitals by the necessity they have of keeping supervision over their homes. Many women, even when seriously ill, kept their purses under their pillows—and with good reason! An effort was made at a meeting of the British Hospitals Association to obtain a vote in favour of the establishment of a central fund for provincial hospitals, to be administered on the lines of King Edward's Fund in London. The proposal was defeated; and there were several indications that even if some measure of co-operation is ultimately brought about, the provincial hospitals will maintain their autonomy and cultivate individualism for the reason given by Dr. H. L. Eason, that the problems of each hospital differ from

those of its neighbours. How this will affect Viscount Hambleden's vision of the possibility of voluntary hospitals taking a definite and permanent part in the scheme of National Health Insurance is not yet clear.

BRITISH ORTHOPAEDIC ASSOCIATION IN HOLLAND.

A MEETING of the British Orthopaedic Association was held at Leyden on May 24th, when twenty-four members from England and Ireland, with several Dutch visitors and one Austrian, were present. The programme of scientific work was provided entirely by Dutch orthopaedic surgeons, and included short papers and demonstrations by Dr. Alvares Correa, Dr. J. van Assen, Dr. W. F. Wassink, Dr. J. W. P. Fransen, and Dr. Murk Jansen. In the evening most of the members went to Amsterdam to attend the congress commemorating the twenty-fifth anniversary of the Dutch Orthopaedic Association. It was held under the presidency of Dr. Murk Jansen, and was of an international character. On May 25th Dr. Adolf Lorenz, of Vienna, gave a demonstration of his method of operating upon untreated congenital or acquired dislocation of the hip, illustrated by cinematograph films; this method was recently described by Dr. Lorenz in the *New York Medical Journal and Record*, and an abstract of the article appeared in our *Epitome* on May 19th, 1923 (para. 410). Sir Robert Jones gave an address on orthopaedic experiences during the war, Dr. F. Calot, of Berck-Plage, spoke on the nature of arthritis deformans of the hip, and Dr. F. H. Albee, of New York, read a paper on bone transplantation, based on 3,000 operations. The physiological treatment of infantile paralysis was discussed by Professor Biesalski of Vienna, the surgery of joints by Professor H. Spitzy of Vienna, and plastic operations on joints by Dr. Putti of Bologna, in addition to eight papers by Dutch orthopaedic surgeons. Next morning, May 26th, the meeting discussed the social care of cripples and the methods of organization in Great Britain, Germany, Vienna, the United States, and Holland, the methods being described by Sir Robert Jones, Professor Biesalski, Professor Spitzy, Dr. Albee, and Dr. van Assen respectively. The orthopaedic work of Holland is chiefly carried on in three centres—Amsterdam, where Dr. Correa is in charge; Leyden, where Dr. Murk Jansen has made a world-wide reputation; and Rotterdam, where Dr. van Assen is mainly responsible. At the Hague, while a certain amount of orthopaedic work is done, there is apparently no surgeon who devotes himself exclusively to this branch of surgery. The British visitors were most generously entertained; a largely attended dinner of the combined British and Dutch Associations was held at Amsterdam on May 25th, when one of the features of the evening was a lengthy humorous poem, read by one of the Dutch surgeons, wittily hitting off, in half a dozen languages, the characteristics of orthopaedic surgeons all over the world. On Saturday, May 26th, the party was taken for a trip on the Zuyder Zee, visiting Marken and Vollendam. As the dam that will enclose a large section of the Zuyder Zee will shortly be finished, this trip, which is very well known to visitors to Holland, will probably be impossible after the present year.

THE DIFFERENTIAL ACTION OF X RAYS.

AN account of experimental researches upon the effects of x rays of different wave-lengths when directed upon animal tissues was given by Professor Sidney Russ, D.Sc., at the Royal Society on May 31st and again at the Röntgen Society on June 5th. The object of the experiments was to decide whether, when equal amounts of x-ray energy of different wave-lengths are absorbed by animal tissues, equal effects are produced. If this is not the case, obviously it would constitute a proof of differential action—an effect to be clearly distinguished from the selective action of the rays themselves. A matter of outstanding importance was to devise some method which would serve to measure the intensity of different beams of x rays used. The ionization method was chosen for this purpose, the ionization in an air-gap giving a measure of the x-ray energy absorbed in the tissues. One of the sets of wave-lengths selected for the purpose of the test ranged from about 0.45 to 0.3 of an Angström unit, the other was about 0.17 of an Angström unit. It was found that on replacing the air-gap by an ionization chamber in which it was possible for secondary rays to be excited by the primary beam, the basis of quantitative comparison was completely upset, and Professor Russ believed that this fact might account for some of the statements of other observers to the effect that a differential action did not exist. The animal tissues employed were the normal skin of the rat and Jensen's rat sarcoma. When the tumour cells are given a sufficient dose of x rays of the longer of the two wave-lengths, the subsequent inoculations of small pieces of irradiated tumour fail to grow, and this dose is called the lethal dose. When this same dose is given in the form of the shorter wave-lengths it is found that the dose is no longer sufficient to prevent subsequent proliferation of the sarcoma cells. By gradually increasing the dose the lethal effect is obtained, and in this case about 2.6 times as much energy has to be absorbed by the tissue as when the longer wave-lengths are used. When the skin of the rat is exposed in somewhat similar fashion it is again found that more of the short wave-length energy has to be absorbed by the skin in order to provoke the same kind and degree of reaction as that produced by the longer wave-lengths. In this case it was found that about six times as much had to be absorbed. Professor Russ considered that these numbers might perhaps be looked upon as therapeutic factors, and he went on to discuss the bearing of these observations upon the selection of the most suitable kind of x rays in the treatment of various forms of malignant disease. In the discussion at the Röntgen Society Dr. N. S. Finzi remarked that he could confirm from another method of measurement the same type of effect. On using the now despised Sabouraud pastille for measurement, he found that the dose to produce epilation of the scalp with unfiltered rays was 5 H, which was just sufficient to cause erythema, whereas if a filter of 0.8 mm. of copper were used the necessary dose rose to 15 H. Major C. E. S. Phillips said that the German school of radiologists had held generally that the therapeutic effects of radiations were simply a function of the amount of energy absorbed by the tissues, and this work by Professor Russ appeared not to be in agreement with that. He thought the feeling of most English physicists was that there must be some specific action, and it should not be exceedingly difficult, certainly not impossible, to suggest some physical basis for such an idea. Professor Russ, in replying on the discussion, agreed with the remark of one speaker that the reaction of the normal tissues was probably as important as the reaction of the cell the operator was trying to affect. But while the reaction of the contiguous normal structure which the malignant cell might be invading was of such great importance, it was very difficult to say anything definite on that subject at the present time. The fact was that the people who were entitled to speak on the subject held rather opposing views, and decisive experiments to establish the reaction of the normal tissues were not easy to devise.

PHYSIOLOGY AT HIGH ALTITUDES.

THE Research Institute for Alpine Physiology and Tuberculosis at Davos will be formally opened in the autumn. The building has been completed and the laboratory equipped; work has, indeed, been going on since the beginning of the year. Professor Loewy, who for many years worked with Professor Zuntz, is the director of the

institute, and is head also of its physiology section. The promises of financial assistance for establishing a bacteriological and physiological section warrant the hope that it also will soon be in working order. The laboratory is ready and the principal equipment installed. This section will be independent of the rest of the institute, both scientifically and financially. Twenty rooms have been provided for scientific work. There is a platform on the roof for irradiation, and a well appointed stable for animals. Rooms are provided for the study of respiration and for blood and gas analyses. There are also chemical laboratories, a dark room for spectral measurements and another for microphotography, an operating room for animals, a sterilizing room, and two large rooms for the library. The institute has been established by the members of the medical profession and the community of Davos, the Grison Association of Physicians, the Canton of the Grisons, the Swiss Association of Naturalists, the Swiss Red Cross, and the Swiss Association for Balneology and Climatology. Among those who have made gifts are the Arosa and the Engadine Associations of Physicians, and it is confidently expected that when the discussion on the tuberculosis bill has been concluded the institute will receive help from the Confederation. The board of directors consists of nine members, of whom five are physicians or naturalists. There is also a scientific advisory council consisting of professors in Swiss universities, and scientific workers recommended by them to undertake researches connected with tuberculosis and high altitudes, and the climate of high altitudes will be considered first in the assignment of working places in the institute. Scientific men of all nationalities, however, will be readily admitted to work under the directors of the several sections. The board of directors will decide whether papers founded on work done in the institute shall be published in scientific periodicals or in a separate volume. The physico-meteorological observatory at Davos, conducted for some time by Professor Dorno, will work in association with the new institute, but will retain its independence. The chief object of this observatory is to investigate the effects of the high mountain climate of Davos on the healthy and the sick, thus continuing the physico-meteorological researches already undertaken. The special character of the Davos Institute is that it will ensure close collaboration among workers in meteorology, physics, physiology, and pathology in a place where climatic conditions are favourable, where material for investigation is ample, and where the medical profession has had special experience in the matter. Dr. Mitchell Bruce, to whom we are indebted for this information, expresses the opinion that the institute deserves the support of scientific workers and medical men in this country, and the hope that some young workers in science, particularly in physiology, will take advantage of the offer to provide working places. Further information can, we understand, be obtained from Dr. Buol of Davos Platz.

MEDICAL HYDROLOGY.

THE course of lectures and demonstrations on medical hydrology—said to be the first of its kind in England—which was announced in our columns (April 28th, p. 735) has recently been concluded in London and Harrogate, and, although it was arranged at short notice, twenty-two medical men and women took part in it. Many efforts have previously been made to organize some systematic teaching in England on the actions and uses of waters and baths in medicine, and shortly before the war a memorial was presented to the Senate of the University of London. Last April a committee was formed representing the International Society of Medical Hydrology and the Section of Balneology and Climatology of the Royal Society of Medicine. A memorandum favouring the inclusion of some form of teaching on the subject at the University of London was signed by seventy-nine medical practitioners at the different spas in England and by fifty-eight other practitioners, and was presented to the University Extension Board. The course which has just been concluded was arranged by the Extension Board in co-operation with this joint committee. The lectures were delivered at the University of London by Drs. Buckley, Edgecombe, Fortescue Fox, Leonard Hill, and Waterhouse. A demonstration on the applications of heat and cold was given at the laboratories of the National Institute for Medical Research, Hampstead, and short lectures on methods of treatment employed in military cases were given at the Ministry of Pensions Special Surgical Hospital, Shepherd's Bush, where a demonstration was given by Dr. Arthur Herbert on the preparation and uses of radio-active mud from New Zealand, and on hyperthermal baths. A very comprehensive and interesting programme was arranged at Harrogate, in which Drs. W. Bain, W. Brown, G. Holmes, Liddell, Miller, Pringle, Saberton, Solly, and others took part. The visitors were conducted by Dr. Campbell McClure. The various forms of treatment given at the Royal Baths were demonstrated and discussed, such as the uses of the different waters internally, sulphur baths, douches of all kinds, peat baths, local vapour baths, colon lavage, etc. The chemical and biochemical investigations and research work carried on at the pathological laboratory were explained, and an *x*-ray demonstration and discussion of cases took place at the Royal Bath Hospital. In the concluding lecture of the course in London, Dr. Fortescue Fox dealt with the applications of hydrology to incipient and chronic disease at different periods of life, and described the characters of British spas as compared with those of other countries. He pointed out that the climatic character of a spa affected the action of every kind of bath. At Strathpeffer the mean summer temperature was 12° less than in the valley of the Rhine, and equal to that of Leukerbad, at 4,600 feet. Harrogate and Buxton were 8° cooler than Nauheim or Aix-les-Bains, and had the same temperature as Bormio, near the Stelvio Pass, at 4,500 feet. Owing to their northern latitude the climate of some British spas had many of the qualities of high altitudes, as might be seen from the flora of the Highlands. The position of Britain on the north-westerly fringe of Europe, and its incomparable coasts, gave to the constantly changing atmosphere of these islands a stimulating quality, analogous in its effects to those of the effervescing bath. All these conditions were different on the Continent. The British spas were the most tonic in the world, and, if suitably utilized for preventive and curative treatment, were well adapted to the chronic ailments and infections of our own country, such as catarrh, tuberculosis, and rheumatism. If it were sometimes necessary for British invalids to be heated up, they might go to the Continent. On the other hand, Continental invalids, who often required the cooling and invigorating phase of treatment, could obtain it best in the British Islands. A third large class of invalids and convalescents for which the British health resorts should cater were those who had lost their health in tropical countries. Among the modern methods which required development at home Dr. Fox specified the utilization of the British eliminative waters, the employment of various forms of effervescing baths, and the external treatment of young subjects by salt waters.

THE RETREAT, YORK.

THE annual report of the Retreat for 1922 is the first presented by Dr. Henry Yellowlees, who succeeded Dr. Bedford Pierce as medical superintendent. The number of patients resident on January 1st, 1922, was 175, and 174 in December, 1922. Since the admissions numbered 109, of whom no fewer than 50 were voluntary boarders, it is

evident that the hospital has an influx of new patients large in proportion to the average number resident. It is fortunate in this respect, because a large number of admissions and discharges does much to create an atmosphere of hope and enthusiasm, which can only be maintained with difficulty in an institution containing chiefly chronic cases. The large proportion of chronic cases is a noteworthy and satisfactory feature. The recoveries were in the proportion of 24 per cent. of the number of cases admitted, or 22 per cent. if voluntary cases are included; 21 cases were discharged recovered, 37 relieved, and 28 not improved. Unfortunately Millfield House, a separate establishment intended for uncertified "borderland" cases, involves a financial loss at present, but the committee has decided not to withdraw from this lead it has given in the development of treatment. Dr. Yellowlees thinks it would be hard to overestimate the value of the work at Millfield; though he feels bound to utter a warning against the optimistic view that all, or even most, cases of mental disease are curable in their incipient stages, yet he is of opinion that treatment in these stages certainly increases the patient's chances, and records with satisfaction and thankfulness that in many cases early treatment at Millfield, so far as he could judge, definitely saved some patients from drifting into chronic mental illness. It is certainly to be hoped that this new scheme will meet with success, so that other institutions may be encouraged to develop along similar lines. It is greatly to the advantage of patients suffering from mild and curable forms of mental disorder that they should be treated entirely apart from the chronic insane.

THE ETIOLOGY OF BLACKWATER FEVER.

Of diseases which affect Europeans in the tropics, blackwater fever is to-day probably that which most urgently calls for investigation. It is a disease the knowledge of which has not progressed in proportion to that of other diseases in tropical countries; yet it takes annually a steady toll of Europeans in these places. Residents in so many districts are exposed to its incidence and so many interests are detrimentally affected by its prevalence that it seems that some concerted action towards the complete elucidation of the causes of it should be undertaken. The best means of approaching the problem of discovering how blackwater is to be eliminated from our tropical possessions, whether by the method of a travelling commission, or by the establishment in a blackwater area of a laboratory for its special study, or by endowing research work in already existing laboratories, has to be determined. Whatever method is adopted, it must be carried out in such a manner that all available modern means of investigation can be utilized, and the work should be organized on co-operative and progressive and, as far as necessary, permanent lines. Such an effort will involve considerable expenditure, but if the problem can be solved the cost will prove to be trifling in comparison with the result achieved. The study of the etiology of blackwater fever has lately received an impetus from the investigations of Blanchard and Lefrou, who discovered in the blood a spirochaete (*S. biliohaemoglobinuriae*) which they assign as a cause. So far, no one has been able to confirm the findings of the workers in the Congo, and we noted last week that Dr. J. Gordon Thomson also had had negative results. An experiment which has a bearing on the important question whether blackwater fever is due to a specific parasite is that carried out by Dr. Blacklock, Director of the Liverpool School Laboratory in Sierra Leone. He injected into a healthy adult European blood taken from the vein of a patient who was suffering from blackwater fever. The injection was made into the deltoid muscle on the fourth day of the disease; the amount of blood used was 1.5 c.cm. The temperature of the patient at the time the blood was taken was 102.5° F., and it remained high until death five days later. Blacklock notes the following sources of fallacy: (1) the possibility that the parasite of blackwater fever is never present in the blood at all; (2) that it is present in such small numbers that the amount injected did not include the organism; (3) that it is present only for one or two days at the commencement of the disease; (4) that it has an unusually long incubation period; and (5) that the subject of inoculation was immune. With regard to the fourth possible source of fallacy it is to be noted that the inoculation was performed on December 4th, 1922, and no ill effects have occurred down to the present date, a period of over six months. Blacklock's experiment shows, therefore, that if there is a parasite of blackwater fever it may be very rare in the peripheral blood, even when the blood is taken on the fourth day of the disease and when the patient's temperature is high. It is evidence against a spirochaetal or other specific organismal origin of blackwater fever.

MILK UNDER SPECIAL DESIGNATIONS.

The Milk and Dairies (Amendment) Act, 1922, empowered the Minister of Health to make regulations under which milk can be produced and sold under special designations, such as "certified," "Grade A (tuberculin tested)," "Grade A," and "pasteurized," thus ensuring to the purchaser certain degrees of purity. On December 9th, 1922, the Minister made an order embodying these regulations, and ten days later, having ascertained that there were difficulties connected with that part of the order relating to the pasteurization of milk, an amending order was made. We endeavoured to epitomize these orders in the JOURNAL of March 10th, 1923 (p. 433), but without making any comment on some of the difficulties which seemed to be connected with their administration. In other quarters criticism was not so sparing, and in a circular (408) issued from the Ministry on May 29th we are informed that representations have been made to the Minister as to the working of these orders, and that "after consideration it appears to him that certain amendments of the detailed provisions of the orders are desirable." A new order (No. 601, 1923) has accordingly been issued embodying these amendments and revoking the existing orders as from July 1st next. The original order required that every animal of the herds concerned should be subjected to periodical veterinary examination. It is now required that the milch cows only should be so examined, and a "milch cow" is defined as "a cow kept for milking purposes." Further, if a cow is found to be suffering from a disease which is not of a permanent nature it will be sufficient for the cow to be isolated, but in the case of a disease the injurious effect of which is likely to be of a permanent character the cow must, as at present, be removed from the herd. To meet the difficulties which have arisen as to the economical disposal of dry cows the provision as to separation of the herd has been altered so as to require that only the cows in milk belonging to the herd shall be kept separate from all other cows in milk. A very important alteration has been made in connexion with "pasteurized milk." The original order required that after pasteurization there must not be in the milk *B. coli* in one-tenth of a cubic centimetre or more than 30,000 bacteria per cubic centimetre, subject to the provision that, until January 1st, 1924, no test for *B. coli* would be imposed, and the maximum bacterial content might reach 50,000 per cubic centimetre. The day of pasteurization was required to be indicated on the vessel containing the milk. In the new order the bacteriological condition has been relaxed so as to remove the test for coliform bacillus altogether, and to provide that

the number of bacteria shall not exceed 100,000 per cubic centimetre; until the end of this year this limit is to be 200,000 per cubic centimetre. There is no longer any obligation to state the day of pasteurization on the milk vessel. Amongst what are described by the Ministry as "minor alterations" are some which will be welcomed by those who are called upon to administer the order. It is now made quite clear that a county borough council is an administering authority, and that a veterinary surgeon who makes the tuberculin test of an animal need only be approved by the Minister of Health and not nominated as required by the original order. In a circular (356) addressed to local authorities in December, 1922, the Minister expressed the opinion that samples of "certified" milk should be taken on the average at the rate of about one sample a month for each producer, the samples generally being taken from all the distributors concerned. It appears that a scheme has now been drawn up by the Ministry by which the sampling of the milk of each producer is divided between two or three authorities, the samples being taken more frequently in the summer than in the winter months.

AN AMERICAN PSYCHOPATHIC HOSPITAL.

THE first annual report of the Boston Psychopathic Hospital is a document of considerable interest to psychiatrists in view of the fact that hospitals with similar aims are now being developed in this country. Formerly a department of the Boston State Hospital for the Insane, the Boston Psychopathic Hospital was established as an independent institution "for the first care and observation of mental patients and the treatment of acute and curable mental disease" in 1920. In presenting his first report Dr. C. Macfie Campbell, the medical director, who was a pupil of the late Sir Thomas Clouston at Edinburgh, formulates the principles involved in the work of the hospital, and restates some of the main problems which it has to deal with, and the function it plays in the general health activities of the community. The main tasks, when the new status was instituted, were to build up the medical staff, to put the various laboratories into commission, to develop occupational opportunities for the patients, and to co-ordinate the social service department with the other activities of the hospital. It would appear to be somewhat to the disadvantage of the hospital that, to a certain extent, it has to be utilized as a clearing house for the disposal of a large number of patients. During the year under review the number of patients received in the wards was 1,937, and there has been a tendency on the part of the medical profession and of the community in general to regard the hospital as an institution in which patients only remain for a few days. As Dr. Campbell observes, it would be unfortunate if this mistaken opinion should become firmly fixed, for, if the hospital is going to undertake the treatment of acute and curable diseases, as well as the study of the nature, causes, and results of insanity, it is obvious that it must be prepared to care for the individual patient during a period of weeks or even months. If a hospital of this type with only 100 beds is utilized as a clearing house we cannot but feel that its usefulness must be diminished, as mental disorders, perhaps more than any other form of illness, cannot be either satisfactorily studied or treated in a few days. One of the problems of the medical work has been to make such arrangements with the other hospitals in the vicinity and with visiting consultants that the patient may be examined as carefully as if he had been admitted to a general hospital. It has fortunately been possible to make very elastic arrangements with the staffs of the hospitals in the adjoining area, so that these principles have been carried out. An endeavour is also being made to improve the nursing personnel by introducing pupil nurses from general hospitals, and graduate nurses who may require special training in mental disorders. A social service department has been organized, as it is realized that in mental disorders environmental factors are of considerable importance. The work of this department has been closely co-ordinated with the work of the individual physicians, and the hospital keeps in close touch with the great number of social organizations which have problems cropping up from time to time requiring some psychiatric review. The account given of this psychiatric social work is most interesting, and its importance can scarcely be over-estimated. The out-patient department, in which 1,075 patients were treated during the year, is the subject of a special report by Dr. Douglas Thom, the chief physician. He writes hopefully of his work, and is convinced of its social value. His experience leads him to express the view that in no way can the State do more for the mental health of its citizens than by a well organized out-patient clinic. "More and more we are finding," he writes, "that the out-patient clinic is becoming the pivot point from which preventive medicine, so far as it relates to the mental health of the community, is radiating. Ministers, teachers, judges, probation officers, physicians, and lawyers are daily turning to the psychiatrist for advice pertaining to the problems of human conduct. Not only are they coming to us, but they are permitting us to become part of their organizations." The hospital is discovering a wide sphere of usefulness in respect to nervous children, and it is satisfactory to observe that an increasing number of cases are being referred to it by the police or by the courts. Dr. Campbell indicates very clearly the attitude of the psychiatrist towards the delinquent—a matter which is apt to be unnecessarily complicated by metaphysical discussions—when he writes: "Some judges feel it is something of an intrusion on their territory for the psychiatrist to formulate an opinion as to the responsibility of the accused, and upon the soundest method of dealing with the accused. In some cases the individual psychiatrist may go beyond the proper limits of a purely medical opinion; this is not necessary. The psychiatrist has to state his opinion of the causes of the behaviour which he investigates, and he can state his opinion in perfectly objective medical or biological terms which involve no reference to such a complex and evasive conception as that of responsibility. He may also state the medical factors to be kept in view in the management of the case without neglecting the importance of other aspects of the case, such as the social and the legal, and without seeking to make the medical management of the case the dominant aspect." Reports of the out-patient department, the biochemical laboratory, the psychological laboratory, the neuropathological laboratory, the department of therapeutic research, and the nursing, social service, occupational therapy, and executive departments are given by those who are responsible for these various spheres of work. Altogether it is evident that the Boston Psychopathic Hospital is filling a definite need, and carrying out medico-social work of great value to the community.

MEDICAL RESEARCH COUNCIL.

DR. GEORGES DREYER, C.B.E., F.R.S., Professor of Pathology in the University of Oxford, has been appointed a member of the Medical Research Council in the vacancy caused by the resignation of Major-General Sir William Leishman, K.C.M.G., F.R.S., consequent on his appointment to be Director-General, Army Medical Services. The appointment of Professor Dreyer was made by the Committee of Privy Council for Medical Research, after consultation with the Medical Research Council and with the President of the Royal Society, by Order of Council dated June 11th, 1923.

THE OCTOCENTENARY OF ST. BARTHOLOMEW'S HOSPITAL.

THE celebration of the eight hundredth anniversary of the Foundation of St. Bartholomew's Hospital was carried out from June 5th to 8th in a most satisfactory manner and on the whole under fairly good conditions of weather. In a large institution like St. Bartholomew's there is always abundance of talent available for every purpose; age was able to temper the exuberance of youth and young blood to stimulate the sluggishness of age. The tradition of centuries has resulted in an *esprit de corps* which proved of the greatest value. Everyone worked in harmony with his neighbour and did that part which was assigned to him without thought of fatigue and to the very best of his ability. It may be said in the words of the herald who used to proclaim the results of the tournaments in Smithfield, "The Treasurer has done well and the Clerk has done well, but to Sir Ernest Flower, Mr. Girling Ball, and Mr. Roth must be awarded the prize."

The celebrations divided themselves into several sections, some serious and formal, marking the real significance of an event without parallel in the history of English medicine; others appealing to the higher instincts of the aesthetic few, and yet others for the baser sort. Former students, nurses, and friends of the hospital came in their thousands from all parts of the world and entered into the proceedings as members of one large and contented family.

Service at St. Bartholomew-the-Great.

The formal celebrations began on Tuesday, June 5th, in the magnificent choir of the contemporary church of St. Bartholomew-the-Great, founded, like the hospital, by Rahere, Augustinian Canon and first Prior. The service had throughout the note of joy and rejoicing befitting the occasion: a processional hymn, a psalm, the lesson from Ecclesiasticus, the Te Deum, a few introits and the Lord's Prayer. The Collect in commemoration of founders and benefactors was adapted from that in the 1560 Latin book of Common Prayer. It was followed by an address given by the Bishop of Chester on the parable of the Good Samaritan. In a few words he paid tribute to the memory of his father, Sir James Paget, and, recalling the story of Rahere, he told how few institutions could show to their founders a record so wholly for good as that of the hospital. A charity which for eight centuries had continued uninterruptedly to carry on the work designed by the founder, enlarged only in scope and improved by experience. A hymn, the Blessing, and the Nunc Dimittis concluded the service.

Solemnity in the Hospital Square.

The large congregation then proceeded to the Hospital Square and witnessed a still more ancient ritual peculiarly consonant to the occasion. A procession of Augustinian Canons—to which order Rahere belonged—from the four houses now established in England, preceded by a thurifer, a cross bearer, two bearers of lighted candles, and some singing-men, came slowly round the square singing a hymn in honour of St. Augustine, the music of which is said traditionally to have been written by Rahere himself, for he was a skilled musician. The procession halted in front of the fountain, offered up a prayer, commemorated St. Bartholomew, and retired singing the psalm "Deus misereatur nobis." The rear of the procession was brought up by the two Abbots of the Order wearing black capes and gold pectoral crosses, the thirteen Canons themselves having short white surplices over their white habits and wearing birettas. The procession turned the thoughts of many present to a similar procession on the same spot which had celebrated the opening of the hospital on March 17th, 1123, when the staff consisted of eight Canons and four sisters. Eight hundred years later sisters, nurses, and staff had increased a hundredfold.

As the clock struck twelve a fanfare of trumpets and the roll of drums high up on the roof of the Great Hall was followed by the announcement of a herald who proclaimed in a loud and commanding voice that the ceremonial observances were about to begin. Immediately two little processions of the sick and poor of London in the dress of King Henry I's days appeared in the square asking charity of two haughty nobles. They asked in vain, but at the very instant Rahere, just returned from a pilgrimage, passed by and the piteous little crowd appealed to him and were clinging round him when Richard Beaumais, the Bishop, came by, stopped, listened to Rahere whilst he drew in the dust a plan for the hospital, gained his consent to proceed with the undertaking, and received a blessing. Two centuries passed and the square was filled with a cheering crowd of citizens—who really did cheer *con amore*—with watermen, beefeaters, courtiers, and a jester. In the middle was the burly, bearded King Henry VIII, who gave to the kneeling Mayor and citizens a charter restoring some of the lands and revenues which he had taken into his hand a few years previously. As he was assuming to himself all the merit of his action, Rahere stepped forward and pointing solemnly upwards reminded him to give honour where honour is due. The bluff King—admirably impersonated by Mr. Arthur Bourchier—fortunately took the reproof in good part and the whole assemblage did homage. The King retired, his court dispersed, and the scene was replaced by nurses and the wounded soldiers in hospital blue who have been only too familiar to the present generation, and to the singing of the hymn, "O God, our help in ages past," the solemnities ended. They were brightened by the brilliant academic costumes of the audience, who wore the gowns and hoods of their degree.

The delegates and staff to the number of 250 lunched with the Lord Mayor at the Mansion House, who, in spite of his recent accident, was present in a wheeled chair to receive them, the assembly being honoured by the attendance of the Prince of Wales, President of the hospital.

The Guildhall Ceremony.

At three o'clock the President, H.R.H. the Prince of Wales, attended at the Guildhall to receive addresses from the delegates who had been chosen to offer good wishes from institutions in many parts of the English-speaking world. The delegates represented the Church of England, Universities of Great Britain and Ireland, Universities of the Dominions and India, Universities of the United States of America, and the Learned Societies of Great Britain and Ireland and the United States of America.

In the absence of the Lord Mayor, Alderman Lord Bearsted welcomed the Prince. Lord Stanmore, treasurer of the hospital, presented His Royal Highness with a gold medal which had been struck in memory of the anniversary from a design made by Mr. Charles L. Hartwell, A.R.A., and a copy of the *Short History of Bartholomew's Hospital*,[1] which had been specially bound by Mrs. Loosely, a daughter of Mr. Henry Power, the first ophthalmic surgeon to the hospital. The delegates then came forward in single file, bowed, presented the address with which they were charged, and retired. Sir Archibald Garrod, Regius Professor of Medicine in the University of Oxford; Dr. Alexander Primrose, representing the University of Toronto; Dr. William Henry Welch, President of the Board of Scientific Directors of the Rockefeller Institute; Sir Walter Fletcher, F.R.S., secretary of the Medical Research Council; and the Right Reverend E. H. Pearce, Bishop of Worcester (and an "Old Blue"), made commendably short speeches of congratulation. His Royal Highness acknowledged the addresses, and in doing so took occasion to review briefly the history of the hospital and to express his satisfaction with the manner in which it had progressed.

The band of the Welsh Guards, under the direction of Lieutenant Andrew Harris, L.R.A.M., played selections of music both at the hospital and in the Guildhall.

The formal proceedings being thus brought to a conclusion, the following days were devoted to various social and spectacular functions.

The Tableaux.

A committee, of which Sir Aston Webb, P.R.A., was chairman and Mr. Richard Jack, R.A., honorary secretary, arranged a series of tableaux in the Great Hall of the hospital to illustrate notable events in the history of the

[1] See Review, BRITISH MEDICAL JOURNAL, June 2nd, 1923, p. 944.

ancient foundation. The subjects presented were: Rahere as a courtier; the crowning of the victor at a tournament in Smithfield, arranged by Mr. Charles Ricketts, R.A.; Rahere's dream; the building of the hospital by Rahere and the delivery of the Charter by King Henry VIII, arranged by Mr. Charles Sims, R.A.; a miracle at Rahere's tomb, and Harvey demonstrating the circulation of the blood to King Charles I, by Mr. Solomon J. Solomon, R.A.; Hogarth painting the pool of Bethesda, and war work by Mr. George Harcourt, A.R.A., were beautiful examples of colour and grouping. Where all were excellent it was hard to say whether one excelled the rest, but as a mere personal feeling, Mr. Solomon's tableau of a girl cured at the tomb of Rahere appealed most to the writer. Each tableau was revealed three times to the audience. Mr. C. S. C. Prance gave a short explanation of each situation before the curtain was drawn, and the music played by students of the Royal Academy of Music was selected by Sir Alexander Mackenzie.

At the conclusion of the first display of the tableaux the delegates were received at the Royal College of Surgeons of England by the President, Sir Anthony Bowlby, and a Vice-President, Sir D'Arcy Power, and were afterwards shown round the Hunterian Museum by Sir Arthur Keith, the Conservator, and Professor Shattock. In the evening, as mentioned below, an old students' dinner was held at Merchant Taylors' Hall; the delegates were invited and the hall was filled to its utmost capacity.

Exhibits.

Numerous valuable and interesting exhibits were to be seen in the Museum and Library of the Medical College, as might be expected in so ancient an institution. Foremost, perhaps, was the actual grant by Rahere of the Church of St. Sepulchre to Hagno, who succeeded him as Master of the hospital. The deed is dated 1137, and the seals were affixed in the presence of Rahere himself. There was also on view the Charter granted by King Henry VIII in 1544 and the Deed of Covenant between Henry VIII and the Mayor and citizens of London dated December 27th, 1546, as well as the Letters Patent of 1547. The beautifully illuminated Cartulary written by John Cok between 1456 and 1468, the Repertory Book, ledgers and journals were amongst the manuscripts shown, as well as a vellum MS. which once belonged to Reginald Colier, Prior of the Convent from 1435 to 1471; this was lent by the Right Hon. John Burns, who also lent a copy of the 1552 edition of *The Order of St. Bartholomew's Hospital*. There was also the indenture of apprenticeship of William Lawrence to John Abernethy dated April 30th, 1799, and a gold snuffbox presented to Sir William Lawrence by Sir William Blizard in gratitude for a successful operation for cataract "in the ninety-second year of his age." There was also a fine display of the plate belonging to the hospital, including a loving cup and the Renter's Mug, in which the tenants of the hospital were given refreshment when they came to pay their rents, whilst in the same case were the Renter's Pistols, which he carried when he journeyed to collect the rents. The Library also displayed a fine collection of portraits, prints, pictures, and other objects of interest connected with the hospital gathered by the pious care of Mr. Morrant Baker, Mr. Walter Jessop, Dr. Arnold Chaplin, Dr. Leonard Mark, and arranged by Mr. G. P. Baker, Sir D'Arcy Power, and Mr. Geoffrey Keynes. In addition to the specimens recently added to the Museum by Dr. T. H. G. Shore, the Curator, there was a remarkable exhibition of surgical instruments, either invented or used by former members of the medical staff from the time of Percivall Pott in 1745 to Mr. G. H. Colt in 1903. The instruments were selected and described by Mr. Alban Doran. Amongst the books the most notable was a copy of the first edition of Harvey's *De Motu Cordis*, lent by the Royal College of Physicians. There was also a copy of the original edition of the *Carmen de Sanguinis Circuitu* which was written by Robert Grove, afterwards Bishop of Chichester. It describes in elegant Latin hexameters Harvey's demonstration of the circulation of the blood on the dog "Senior." The description is so minute and life-like that Grove must have been present. It was lent by Mr. Sidney H. Badcock, who also showed the original copper-plate portrait of William Harvey engraved by Faithorne to illustrate the first English edition of the *De Generatione* published in 1653. Mr. Badcock was able to trace the subsequent history of the plate.

Bartholomew Fair.

It was a happy thought to revive the ancient Bartholomew Fair as part of the octocentenary celebrations; and it was wise as well as happy to hand to the students of the hospital the duty of making the undertaking a success. Even before Rahere founded the Priory in 1123, a fair, then called the King's Market, was held regularly in the Smooth- or Smith-field, and every year from that time till 1855 a fair was held in the same place. This year once again the Lord Mayor proceeded in state through the city and proclaimed the fair, as so many of his predecessors had done before him. He did not, however, stop at Newgate Gaol for "a cool tankard of wine, nutmeg, and sugar." Nor did the City Treasurer pay a fee of three shillings and sixpence to the rector of St. Bartholomew-the-Great for making the proclamation in his parish. June 6th, the day chosen for the opening of the fair, was unfortunately wet, but this did not deter the Lord Mayor, still crippled by his accident, from opening the proceedings, nor did it prevent a very large attendance.

After the proclamation had been made the following address was read by Mr. W. Holdsworth, senior honorary secretary of the Students' Union:

My Lord Mayor,

We, the Students of the Medical College of St. Bartholomew's Hospital, in the City of London, desire to thank you most heartily in our own name and in that of the present assembly for your courtesy in coming amongst us to-day to open the mimic representation of that Fair which was held for so many years in the immediate neighbourhood of the place where we now stand, a Fair of much value to us as Students because, under the eye of our Masters, we learnt to treat many injuries and divers wounds which we might otherwise never have had the opportunity of seeing. ¶ We feel, Sir, that your presence to-day is an additional proof of the interest which the Citizens of London have always shown in the welfare of their Hospital during the eight hundred years it has served them, an interest which has increased, were it possible, with the lapse of years. ¶ We remember with gratitude that when in the past the fortunes of the Hospital were at their lowest ebb, the Citizens of London interceded for this their Hospital, and did establish it on so firm a foundation that it has been enabled, in the fulness of time, to obtain a foremost position amongst the great charities, not only of this metropolis, but of the world itself.

Sir,—We are grateful to you, and we know that so long as we are true to the great traditions we have inherited from the long line of our illustrious predecessors, we shall merit your esteem and continued confidence.

After hippocras had been drunk from a loving cup the Lord Mayor made a round of the fair, ordering the release of certain malefactors who happened to be incarcerated in the stocks. The fair itself was a very great success. The stalls were quaintly named and did good business. "Here is sold Sac and Petum of Virginia" hid the identity of a tobacco stall; flowers were sold from "Sir Ernest's own Beaupot and Posy Booth." The side-shows were arranged with skill and enterprise. Magicians, astrologers, stilt-walkers, soothsayers, boxers, and "makers of sweet music" were very evident. Here was the representative of quackery through all the ages. Gowned in fur and chalk in hand, he described the growth of a corn in a manner entirely unauthorized by his professor of pathology, Sir Frederick Andrewes. His cure was marvellous. A learned man in Egypt had given him the secret with the hand of his daughter. "The remedy is here. The lady I left on the banks of the Nile." Here, too, was the palmer fresh from the shrine of St. James of Compostella, staff in hand and shell in hat, telling his tale to all and sundry, averring that he had gone barefoot all the way when it was plain from the look of his feet that he had been shod and had had peas, and boiled peas at that, in his boots. And so the fun continued till seven o'clock on the evening of June 8th, when the fair terminated with the singing of the National Anthem. About £4,000 was raised by fair and tableaux, sufficient to cover the cost of the enterprise. The students, under the leadership of Mr. W. Holdsworth, are to be congratulated on managing the fair with the utmost success and dignity. High-spirited fun was everywhere at all times apparent; never was there any suggestion of rowdyism. Sir Ernest

Flower, whose was the older brain behind the show, must feel mightily pleased at the success of his efforts.

The Conversazione.

On Thursday, June 7th, at 8.30 p.m., a conversazione was held at St. Bartholomew's Hospital. More than 3,000 guests were received by Lord Stanmore, treasurer of the hospital and president of the medical college; Miss McIntosh, C.B.E., R.R.C., matron of the hospital; Dr. T. W. Shore, dean of the medical college; and the Rev. W. F. G. Sandwith, rector of St. Bartholomew-the-Great. The old square of the hospital and the fountain, so essentially the centre of the life of St. Bartholomew's, had been gaily decorated with fairy lamps. Each department vied with the others in making its own branch of medical science interesting to the lay as well as to the medical mind. In the chemical laboratory Dr. W. H. Hurtley had hit upon the happy plan of allowing his students themselves to demonstrate striking chemical experiments, and remarkably well and enthusiastically did these youngsters do their work. The dispensary, with its demonstration of the making of drugs, was immensely popular. So varied and remarkable were the displays that it is not possible to do more than suggest their nature, but one side-show must not be forgotten. In a small room off the surgery was a representation of a Sairey Gamp: the comfortable figure, the poke bonnet, the hot and flushed face, the patient lying uncared for in the corner, the mug of gin and water, together with much histrionic skill, made a Dickensian picture which will never be forgotten by those who saw it. Miss Birch, affectionately known to generations of Bart's men as "Sister Scrubbing-Ladies," must be complimented on her demonstration of "ancient nursing." The heads of departments deserve congratulations on the value and interest of their exhibits, and the warden of the college, Mr. Reginald M. Vick, on his excellent staff work.

Rahere Lodge.

The Masonic Lodge founded in 1895 for the convenience of Freemasons belonging to St. Bartholomew's Hospital held an especial meeting in the Freemasons' Hall on Friday, June 8th, in the presence of the Grand Master, H.R.H. the Duke of Connaught, and the Pro-Grand Master, Lord Ampthill. Mr. W. Girling Ball was installed as Master of the Lodge by Dr. Harold Pritchard, his predecessor in the chair. Upon the nomination of Dr. R. J. Reece, seconded by Sir D'Arcy Power, the Duke of Connaught was elected an honorary member of the Lodge. In returning thanks, His Royal Highness recalled the fact that his brother, King Edward, when Prince of Wales, had personally constituted the Lodge twenty-eight years previously, and had honoured it by becoming an honorary member. Immediately afterwards H.R.H. the Prince of Wales was elected an honorary member upon the proposition of Dr. H. Morley Fletcher, seconded by Dr. Harold Pritchard. In the course of the proceedings, Mr. Ernest Clarke read a brilliant but short address on the history of the Lodge, pointing out that ten of the twenty-six founders survived and seven of the ten were then present in the Lodge. The Rahere Lodge, he said, was the first of the long line of hospital Lodges which had drawn into Freemasonry a large number of earnest men who had diffused the principles and tenets of the craft throughout the world. Upwards of three hundred and fifty brethren afterwards attended the banquet in the Connaught Rooms, where eloquent speeches were made by Lord Ampthill and by Dr. George E. McLean, the delegate from the State University of Iowa, U.S.A.

THE OLD STUDENTS' DINNER.

The annual Old Students' Dinner usually takes place at the beginning of the winter session, but the date was advanced this year in order to coincide with the octocentenary celebrations. The dinner was accordingly held on Wednesday, June 6th, in Merchant Taylors' Hall, Threadneedle Street, lent for the purpose by the Master and Wardens of the Merchant Taylors' Company. The chair was taken by Mr. H. J. Waring, senior surgeon to the hospital and Vice-Chancellor of the University of London, who was supported by a company which numbered some 315, filling the large chamber and overflowing into the gallery. Among those present were most of the consulting and active staffs. The guests included many of the delegates from the universities and learned societies of Great Britain and Ireland, the Dominions, and the United States, who had presented congratulatory addresses to the President, H.R.H. the Prince of Wales, on the previous afternoon during the Guildhall ceremony. Of these a considerable proportion are old students of the hospital, like the Presidents of the two English Royal Colleges and the Regius Professor of Medicine at Oxford; Sir Walter Fletcher, representing the Royal Society; Sir Joseph Verco, University of Adelaide; Professor A. J. Hall, University of Sheffield; Dr. Howard Tooth, University of Malta; and Professor A. J. Clark, University of Cape Town. Other delegates besides those mentioned among the after-dinner speakers were the Presidents of the Royal Colleges of Surgeons of Edinburgh and Dublin, and of the Royal Society of Medicine; the Vice-President of the Royal College of Physicians of Ireland; Sir David Drummond, representing the University of Durham; Mr. G. P. Newbolt, University of Liverpool; Professor Edward Fawcett, University of Bristol; Professor T. Sinclair, the Acting Vice-Chancellor of the Queen's University of Belfast; Professor J. Read, University of Sydney; Dr. D. J. Coffey, National University of Ireland; Dr. W. C. Quinby, Harvard University; Dr. A. Primrose, University of Toronto.

After the loyal toasts had been honoured, the Chairman proposed "Prosperity to the Hospital." He said that the history of the hospital might be divided into three epochs: the first beginning with its foundation by Rahere in 1123; the second in 1544 with Henry VIII's charter; and the third in 1901 when the momentous decision was taken to keep it on its ancient site in the City and to adapt it to modern requirements. Much had been done already in the past twenty-two years to carry out this intention, but much still remained to do; in particular, the question arose of how best to modernize the wards. The toast was replied to by Lord Stanmore, treasurer of the hospital and president of the medical college, who welcomed the great number of honoured guests now assembled to pay honour to St. Bartholomew's. The financial position, he said, was already much more secure, and this year the hospital would make both ends meet; but more money was needed in order to keep it in the front rank of the hospitals of the world. A reconstruction committee of five had been set up, consisting of two governors, two members of the medical college, with the treasurer as chairman. The toast of the Medical College was proposed in a witty speech by Sir William Lawrence, Bt., Senior Almoner, who took pride in the excellent relations between the governors, the staff, and the students. He coupled the toast with the name of the Dean, Dr. T. W. Shore, who on rising to reply was received with great enthusiasm. Dr. Shore began by remarking that Bart's was a blend of the very ancient and the extremely modern. Records of the attendances of students went back to 1662, but the real beginning of the school was about a century ago, when Abernethy was asked to take over the educational arrangements. Dr. Shore was proud to feel that throughout his own association with Bart's, a mere matter of 44 years, the keynote of the school had been progress. To quote one instance, it was the first to accept the offer of the Board of Education to assist in the establishment of clinical professorial units. The health of the guests had been wisely entrusted to Dr. Herbert Williamson, who has the gift of paying compliments in sparkling phrases; and the responses to this toast were entrusted to Field-Marshal Lord Methuen (delegate of the Bishop of Salisbury), Professor T. Kirkpatrick Monro (Delegate of the University of Glasgow), and Professor William Henry Welch (Delegate of the Rockefeller Institute and the Johns Hopkins University. As an ecclesiastical representative (Dr. Williamson had included him among the "guests spiritual") Lord Methuen spoke of the happy relations between the Church of to-day and modern Medicine; as a soldier he expressed admiration for the medical services, mentioning in particular his debt to Sir Archibald Garrod and Dr. Tooth at Malta during the late war. Professor Monro, in offering

the congratulations of Scottish Medicine to St. Bartholomew's, reminded his hearers that the Principal and Vice-Chancellor of his own University, Sir Donald MacAlister, had been a student and teacher at Bart's. Professor Welch, in an eloquent speech, said that Bart's in its octocentenary year was proud of the glories of the past, but its face was towards the future. He declared that the backbone of American Medicine was British, and America was now beginning to pay something of her debt to British Medicine.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

The Mental Treatment Bill.

THIS bill was considered on report in the House of Lords, and a few formal amendments having been agreed to, the bill was ordered for third reading.

Insurance Medical Service.

Sir Kingsley Wood asked, on June 6th, whether the Minister of Health proposed to make any independent inquiry into the panel system. Lord E. Percy said the Minister was independent and was always inquiring. Dr. Watts asked of what use were the records kept by panel doctors, either from scientific or other point of view, and what was the cost of the insurance fund; and whether the Minister was aware that the fact that these records had to be kept stopped many insured persons, especially when suffering from certain diseases, from consulting their panel doctors, and so allow these diseases to become much more serious owing to the lack of proper treatment. Lord E. Percy referred the honourable member to the report of Sir Humphry Rolleston's committee which was presented to Parliament (Cmd. 836 of 1920). The keeping of records was part of the terms of service of insurance practitioners, and was not separately paid for. Great care was taken to preserve their confidential character, and the Minister had no evidence in support of the suggestion contained in the last part of the question. In reply to Mr. Hurd, Lord E. Percy said that certain proposals for the revision of the terms of service of insurance practitioners, based mainly on recommendations of the Insurance Consultative Council, had been discussed with the Insurance Acts Committee of the British Medical Association, and that Committee had put forward certain suggestions. All the proposals would be discussed at a conference of representatives of panel committees throughout the country. Lord E. Percy has also stated that the desirability of revising medical certificate forms is now being investigated, and that the Minister of Health has promised to consider whether spare space should be utilized to give information regarding National Health Insurance questions.

Insurance Dental Treatment.—In answer to Mr. Scrymgeour, on June 6th, Lord E. Percy said that the payment of the whole or part of the cost of dental treatment was included among the additional benefits which an approved society was entitled to provide for its members out of a disposable surplus declared on its value. Several societies, with a total membership of nearly 7,000,000 insured persons, had already made such provision. The Minister of Health hoped that under the scheme arising out of the second valuation, which was about to take place, it would be made available for an even larger number of insured persons than at present.

Cancer Research.—Dr. Chapple asked, on June 6th, whether the Minister of Health would take steps to ensure that the scientific research effort now being made in Britain in the direction of discovering the cause and cure of cancer were not hindered by lack of funds, and Major Molloy inquired whether the Minister would endeavour to procure a large increase in the present inadequate subsidy granted by the Treasury for research, so that it might be co-ordinated so far as notification and clinical information as to incidence were concerned. Lord E. Percy referred members to the answer he gave on June 4th to Mr. Alfred T. Davies, which has been published in these notes.

Infectious Diseases.—Sir W. Preston asked, on June 6th, whether the Ministry of Health had any control over arrangements which county medical authorities made when dealing with epidemics and infectious diseases; and whether, if a county medical officer made improper or inadequate provision for handling cases, the Ministry of Health had powers to compel such officer to take proper steps. Lord E. Percy said that the duty of dealing with infectious diseases was imposed by law on the local authorities and district medical officers of health. The Minister of Health was, however, empowered to make regulations enabling the county council to provide hospitals for the isolation and treatment of the diseases. Such regulations, where made, placed on the district medical officer of health, subject to any directions which might be given to him by the county medical officer, the duty of securing the isolation and treatment of patients in hospitals and to take all the necessary steps for preventing the spread of the disease. The answer to the last part of the question was in the negative.

Miners' Nystagmus.—Mr. Mardy Jones asked, on June 11th, whether the attention of the Secretary for Mines had been drawn to Mr. Frederick Robson's paper read before the South Wales Institute of Engineers, in which he advanced evidence in support of his theory that miners' nystagmus is caused by the inhalation of noxious gases given off in a coal face and not to the defective illumination of miners' lamps; and whether, in view of the character of the evidence submitted, the Minister would institute further inquiries into the whole matter. Lieut.-Colonel Lane Fox said that the evidence in support of his theory had been considered carefully by the members of the Medical Committee concerned, and they were unanimously unable to accept that theory. He appreciated that Mr. Robson had devoted much time and care to the study of nystagmus, and every theory supported by evidence should be considered.

Metropolitan Asylums Board Hospitals.—Lord E. Percy informed Mr. Gilbert, on June 6th, that fifteen hospitals for infectious diseases, other than tuberculosis and venereal diseases, were maintained by the Metropolitan Asylums Board and the number of beds therein was 8,779. The total numbers of patients treated during the years 1920, 1921, and 1922 were 40,705. 55,324, and 41,819 respectively. The total net expenditure of the Board during the years ended March 31st, 1920, March 31st, 1921, and March 31st, 1922, was £1,872,013, £2,748,872, and £2,565,233 respectively. A rate of 9½d. in the £ had been levied to meet the expenses of the Board during the current financial year. The provision and maintenance of hospitals for infectious diseases formed only a part, though an important one, of the work of the Board.

A Medical Officer's Salary.—Lord E. Percy informed Sir R. Winfrey, on June 6th, that the reason why the Minister of Health refused to agree to a reduction in the salary of the medical officer of health for the Nutford and Launditch Union was that efficient service could not reasonably be expected from the medical officer of health in this extensive rural district for less than his present salary of £150 per annum, which was inclusive of travelling and clerical expenses.

Disability Pensions.—Major Tryon informed Mr. F. Roberts, on June 11th, that in the case of men invalided from service it was an express rule of the Pensions Department that there was a prima facie presumption that the invaliding disability was due to, or aggravated by, the man's service. In the case of demobilized men he had, in accordance with the advice of the highest independent medical authorities in the kingdom, directed, in the case of certain diseases, in which the first overt symptom might not appear for some time after the original causation of the disability, that even though such symptoms did not manifest themselves until a year (in the case of tuberculosis), or, in the case of certain other diseases, even two years after the man's discharge from service, the disease might, subject to the proper diagnosis of the man's condition, be accepted as having originated in, or existed during, service without further evidence on the point. He was advised, however, that those principles could not apply to any and every complaint from which an ex-service man might suffer for the rest of his life, for the reason he had given in a previous answer on April 19th to Mr. Bennett.

Tuberculous Milk.—Mr. Adams asked, on May 30th, whether the corporation of Newcastle-upon-Tyne, in their weekly examinations for tuberculosis in samples of milk sold for use in that city, found that the highest proportion of positive samples was 10.4 per cent. in 1912, and that during the period of cattle shortage and general control by the Government of slaughtering it fell steadily to 3.6 in 1919, but that since that year it had risen again, and by 1922 stood at the relative high figure of 7 per cent.; and whether the Minister would take or propose measures for dealing more efficiently with herds in rural areas by transferring the duties in connexion therewith from the small local authorities to combinations of these, or to county councils. Mr. Chamberlain said he understood that the facts were as stated. The duty of taking measures to prevent the sale of tuberculous milk was placed on county and county borough councils by the Milk and Dairies (Consolidation) Act, 1915, but the commencement of that Act had been postponed till September 1st, 1925, by the Milk and Dairies (Amendment) Act, 1922. Section 11 of the Act of 1922 provided for the transfer to the county council of the powers and duties of a district council under that Act or any other enactments, orders, or regulations relating to milk and dairies, if the county council resolved that the district council had failed to exercise or perform any of those powers or duties and made complaint to his department.

Answers in Brief.

The total amount paid from the Exchequer in respect of the tuberculosis schemes in Scotland during the year ended March 31st last was £339,509.

Lord E. Percy states that particulars are not yet available regarding vaccination in Leicester during 1922, but in the previous five years only 3.5 per cent. of the newly born children were vaccinated, the bulk of the remainder being exempted on account of statutory declarations by parents or guardians. No cases of small-pox had been notified in Leicester and there had been no deaths from that disease during the past five years.

During the past six months (four years after the armistice) 1,600 first claims on account of tuberculosis have been rejected on the grounds that the disability was neither due to nor aggravated by service, and 1,100 have been admitted.

The British Government is sending a delegation to the International Congress on Alcoholism the Danish Government has arranged to hold in Copenhagen in August.

Mr. Neville Chamberlain states that the average amount devoted by the Medical Research Council to direct cancer research has been approximately £5,000 during the last three years.

England and Wales.

VITAL STATISTICS OF ENGLAND AND WALES.

WE have received from the Ministry of Health a copy of a publication bearing the somewhat cumbersome title *The Registrar-General's Statistical Review of England and Wales for 1921. (New Annual Series, No. 1.) Tables, Part II, Civil.*[1] This volume, we learn, forms part of the annual series of statistical publications which, under the style of the Registrar-General's Statistical Review, will henceforth take the place of the Registrar-General's Annual Report. The change in form and name is governed by the provisions of Section 5 of the Census Act, 1920, which requires the Registrar-General from time to time to collect and publish statistical information regarding the number and condition of the population in the interval between one census and another. The tables for 1921 have been divided into two groups — medical statistics and civil statistics—and the whole Statistical Review will, from now onwards, be issued in three sections at different prices, entitled respectively: Text; Tables, Part I, Medical; Tables, Part II, Civil. The intention is to issue each section as soon as it is ready, instead of, as formerly, holding back the publication of the tables until the text based upon them has been prepared. The present volume consists primarily of those tables contained in the old series which have a general demographic interest. It includes also tables showing populations, births, deaths, infant mortality, and marriages in British Dominions, and other administrative statistics of various kinds relating to the social and civil condition of the population. The companion volume of medical tables has already appeared,[2] and the series will be completed for the year 1921 by the volume of explanatory text shortly to be issued. From the tabular matter now published it appears that the birth rate for 1921 — 22.4 per 1,000 persons living — was the lowest recorded since the beginning of civil registration in 1837, except for the war years 1915-19 inclusive. The 848,814 births consisted of 434,895 males and 413,919 females—that is, 1,051 males to every 1,000 females. Illegitimate births numbered 38,618, or 45 in every 1,000 births. The excess of births over deaths ("natural increase") was 390,185, or approximately 10 per cent. of the population. Marriages numbered 320,852, representing 16.9 persons married per 1,000 living. The figures for divorce were the highest ever recorded; the number of decrees *nisi* made absolute for "dissolution" were 3,458, and for "annulment" 64, making a total of 3,522. Divorced men to the number of 1,592, and 1,286 divorced women, remarried in 1921; 28,627 widowers and 29,141 widows remarried.

ROYAL ALBERT EDWARD INFIRMARY, WIGAN.

The fiftieth anniversary of the opening of the Royal Albert Edward Infirmary, Wigan, was celebrated on June 4th, when Lady Mary Lindsay, daughter of the Earl of Crawford, acting for her mother, unveiled a commemoration tablet in connexion with the new operating theatre now in course of construction. The new building, which is to commemorate the jubilee of the Infirmary, forms a complete operating unit with all the conveniences of modern surgery. Around a small octagonal hall are arranged the operating theatre, with an annexe containing sterilizers, sinks, etc., an anaesthetizing room, surgeons' cloak room and dressing room, and a separate room for the large sterilizers. The heating will be partly by hot water and partly by steam, and the ventilation is taken by flues to a duct over the roof with an electric exhaust fan, and fresh air is admitted behind the radiators through filters so that it is cleaned and warmed as it passes into the theatre. Lord Crawford, president of the Infirmary, who presided at the opening ceremony, said that in the first completed year of the institution, fifty years ago, twenty major operations were performed, whereas during the last completed year the number of operations had risen to 1,335. The financial status of the Infirmary was remarkable, and was mainly based upon the system of weekly contributions; last year the income from these contributions amounted to £17,000. This meant much confidence in the Board of Management and in the medical and nursing staffs. That confidence had been maintained ever since the Infirmary was founded, by the knowledge that its door was ever open, that its authorities were alive to the progress of science, anxious to keep the equipment up to date, and ready to serve the interests and comfort of the patients. The people of to-day ought to be proud to belong to an age which had devised marvels for the relief of human suffering. In an age which had produced Simpson, Lister, and Pasteur the tide must indeed be at flood which might lead forward to further victories. Colonel W. M. Roocroft, C.M.G., honorary consulting surgeon to the Infirmary, said that he first joined the surgical staff of the Infirmary in May, 1883, and he served until he had to relinquish his duties, owing to the war, on August 4th, 1914. The hospital had doubled the number of beds, and the number of operations was multiplied ten times as compared with when he was first on the staff. Many constructional alterations had taken place in the operating theatre and the question of a new theatre had previously been brought forward from time to time, but was frustrated by lack of funds. The improved facilities now available for the carrying out of modern surgical technique would be for the benefit of the institution and the well-being of the patients.

[1] London: Printed and published by H.M. Stationery Office, or to be purchased through any bookseller. 1923. Price 5s. net.

[2] BRITISH MEDICAL JOURNAL, February 17th, 1923, p. 299.

Scotland.

THE GIBSON MEMORIAL LECTURE.

THE George Alexander Gibson Memorial Lecture will be delivered before the Royal College of Physicians of Edinburgh by Dr. W. T. Ritchie on Wednesday and Thursday, June 27th and 28th, at 5 p.m. on each day. The subject of the lecture is the response of the heart in health and disease.

PUERPERAL MORBIDITY AND MORTALITY.

The Scottish Board of Health has appointed a Departmental Committee to inquire into the incidence of puerperal morbidity and mortality, with special reference to the causes contributing thereto, and to suggest any remedial measures. The composition of the Committee is as follows: The Right Hon. Lord Salvesen (chairman); Mrs. Mary Barbour, a member of Glasgow Town Council; Dr. R. C. Buist, honorary secretary Dundee Branch of the British Medical Association; Miss M. E. Cairns, Glasgow, vice-president Scottish Midwives' Association; Dr. T. F. Dewar, C.B., Scottish Board of Health; Miss A. M. Fraser, Assistant Inspector of Midwives and Chief Health Visitor, Motherwell and Wishaw Burgh, and Superintendent of the District Nursing Association; Dr. Matthew Hay, Professor of Forensic Medicine, University of Aberdeen, late Medical Officer of Health of Aberdeen Burgh, a Director of Aberdeen Maternity Hospital; Dr. B. P. Watson, Professor of Midwifery and Gynaecology, University of Edinburgh; with Mr. C. L. Farmer, Scottish Board of Health, as Secretary.

EDINBURGH SURGICAL APPLIANCE SOCIETY.

An important Edinburgh war medical charity held its final meeting last week when Sir Montagu Cotterill, C.M.G., F.R.C.S.E., presided over the last annual meeting of the Edinburgh Surgical Appliance Society. The honorary superintendent, Miss Malcolm, reported on the activity of the Society since its inception in 1917, by the Scottish Women's First Aid Corps, for the purpose of supplying splints, drop-foot boots, and similar requisites to wounded men. Altogether in the six years of its existence some two thousand orthopaedic appliances had been manufactured and sent out. During the war the staff numbered 70; the work had been entirely voluntary. The chairman expressed the regret which the Society felt that the work now had to cease, and said that the medical charities in Edinburgh were losing an important adjunct to their work, and ample testimony to its value had been forthcoming from those who had benefited by it. A vote of thanks to the honorary superintendent was adopted with cordial unanimity.

CONFERENCE OF HEALTH VISITORS.

The fourth annual conference of the Scottish National Association of Health Visitors, Women Sanitary Inspectors, and School Nurses was held recently in the City Chambers,

Glasgow, under the presidency of Lady Leslie Mackenzie, the president of the association. Dr. A. K. Chalmers, M.O.H. Glasgow, gave an address on the causes of the decrease in the infant mortality rate during the last twenty years. He said that at the beginning of the present century there were no maternity and child welfare schemes as at present known, little organized effort to control tuberculosis, and none at all to deal on a large scale with venereal disease in the expectant mother and her offspring. It was a curious and significant coincidence that the awakening and afterwards the extension of effort on behalf of infancy and childhood had both been very definitely related to periods of war. The co-ordination of effort for the reduction of infant mortality began after the revelations of physical inefficiency at the time of the South African war, and the inclusion of a much larger field of child welfare was the work of recent years. He thought that in the future of social reconstruction the welfare of the child would fill an important place.

Professor B. P. Watson, professor of midwifery, Edinburgh University, read a paper on the value of ante-natal work, in the course of which he said that no branch of medicine was so encumbered and hampered by superstitions born of ignorance as that which was concerned with the care of the expectant mother. The social worker possessing the requisite knowledge could do much to overcome the prejudice against modern means of prophylaxis and treatment. In no department was preventive medicine more important than in midwifery, for practically all the disasters which resulted in the disability or death of the pregnant or parturient woman could be anticipated and prevented. In England and Wales there was an average of 3,500 deaths each year from childbirth, and in Scotland between 600 and 700. Then there was an enormous wastage of life in miscarriages and the birth of stillborn children. On an average, one pregnancy in every eight terminated in abortion, and under modern conditions that proportion was constantly tending to become higher. Three children out of every hundred were stillborn, and a considerable number born alive were so feeble that a further 4.5 per cent. died within the first four weeks of life. It was therefore very important that the pregnant woman should seek medical advice early. In the well-to-do and working classes this supervision should be exercised by the family doctor or the obstetrician, and for the poorer classes maternity centres should be established in every city and every district. These centres, where possible, should be in direct contact with an obstetrical hospital and should be staffed by physicians and by nurses who would follow up the patients in their own homes.

Ireland.

ANNUAL MEETING OF THE IRISH MEDICAL ASSOCIATION.

THE annual meeting of the Irish Medical Association was held on June 6th in the Royal College of Surgeons, Dublin, when Senator W. J. O'Sullivan, M.D., occupied the chair. A warm vote of thanks was passed to Dr. Edward Magennis, the outgoing president. The report stated that the council of the Association decided to invite the Irish Medical Committee, as constituted in July, 1913, to be attached to the Irish Medical Association as one of its standing committees. The adoption of the scheme would not in any way prejudice the question of amalgamation with the British Medical Association, nor would it alter the broad lines on which the Committee was formed. The matter will be brought before a delegates' meeting to be held at a future date. Owing to the unrest in the country the Association has been greatly hampered in its work. It is hoped, however, that the activities of the Association may be renewed. Efforts were made to have the motor tax on doctors' cars considerably reduced, and while some slight change has been made in the method of rating, yet it affords no material advantage.

In his presidential address Dr. O'Sullivan said that, short as was the time for which the Irish Government had existed, it had already given solid assurance of its will and ability to grapple with the several economic questions affecting the Irish people. There was, however, to be noticed an almost total absence on the part of the Irish Government of any disposition to request, or accept when given, the advice of the Irish medical profession on purely medical affairs. In the Free State were commissions dealing with most questions of national importance, with the one notable exception, the health of the people. It was, of course, true that, under the new régime, far-reaching changes in the Poor Law administration had been seen, and many of the changes had a great deal to recommend them, but so far as they included the medical services they had been decidedly for the worse. At the time these changes were being first contemplated their more serious defects were pointed out on behalf of the profession, but the warnings were unheeded, with the result that at the moment the efficiency of the medical services which were considered to meet the requirements of the less well-to-do classes were at a lower standard than they had been for the past twenty-five years. It could not be said that there was in the modern sense any live public health service. The prevention of the spread of infectious disease was altogether dependent on the medical attendant, who, in a large percentage of cases, might be the dispensary doctor, and who also was medical officer of health for his district. For the latter office he received generally about £20 a year, which seemed to suggest that he was not expected to knock up a very great row about public health. It must be admitted, Dr. O'Sullivan said, that the reputation of Irish sanitation was very bad; that, from the commercial point of view for a food-exporting country, was not reassuring.

GRADUATES OF DUBLIN UNIVERSITY.

We have received the following letter, which is of interest to graduates of the University of Dublin. It points out that though resident elsewhere they retain their right to vote for representatives of the University of Dail Eireann.

Trinity College, Dublin,
June 7th, 1923.

SIR,—All scholars, ex-scholars and graduates of Dublin University, whether resident in the Irish Free State or not, who desire to retain their Irish citizenship and their privilege of voting for representatives of their University in Dail Eireann, are earnestly requested to fill up and return to the Registrar of University Electors the forms of claim to vote which were recently sent out.

It is not the case that residence in the Free State is essential to entitle an elector to be placed upon the Register of University Electors, nor is an elector who happens to have a vote in a constituency in Great Britain or in Northern Ireland prohibited from retaining it. No University elector may be upon the register of any other constituency in the Saorstat, but an elector in Great Britain or Northern Ireland may also be upon the university register, provided he claims the rights of citizenship, of which one is the right to vote for the representatives of his university in the Saorstat and has the qualifications prescribed by the constitution.

It must be remembered that domicile is not tantamount to residence, as some persons appear to suppose.—We are, etc.,

E. H. ALTON,
JAMES CRAIG,
GERALD FITZGIBBON,
WM. E. THRIFT.

The position with regard to the National University is the same. Graduates who have not yet received forms, or mislaid those sent them, should apply at once to the Registration Officer, Trinity College, Dublin, or to the Registration Officer, National University of Ireland, 49, Merrion Square, Dublin.

NEW CANCER HOSPITAL, BELFAST.

The foundation stone of the new Cancer Hospital, Belfast, to be erected by the Belfast Board of Guardians, was laid by the Duchess of Abercorn on May 24th. Numerous speeches were delivered congratulating the board on its forward policy and its determination to do the best for those under its charge. The building will be of great help to the staff in their work, and will carry out the principle of the board as previously shown in the Consumptive Sanatorium at Whiteabbey, in the recently erected Children's Block, and in other improvements. The wards will face south, and there will be a flat garden roof.

AN examination of 445,000 school children in St. Gallen, Switzerland, for goitre showed that the thyroid was not palpable in 6.4 per cent., 31.7 per cent. had a palpable thyroid but no goitre, while 39.8 per cent. had a soft goitre and 22.1 per cent. a nodular goitre.

Correspondence.

PREVENTION OF HEART DISEASE.

SIR,—"The ravages of rheumatic heart disease deserve our close attention in London, and wherever there seems to be any ray of light that direction is worth exploring." This sentence from the concluding paragraph of Dr. Poynton's admirable lecture on the prevention of heart disease (June 2nd, p. 919) encourages me to remark that light may, perhaps, be found in the unpromising atmosphere of this rather grimy city, for it is now nearly two years since the Birmingham Education Committee, on my advice, began an experiment to this end which has proved, I think, successful.

As Dr. Poynton points out, no physician can avoid noticing the frequent incidence of serious sequelae of rheumatism in children of the hospital class, and their comparative rarity in the children of the well-to-do. It seemed clear to me that this difference resulted almost entirely from the lack of adequate provision for the convalescence of the poorer child. Here in Birmingham we suffer in the same way as Dr. Poynton suffers at Great Ormond Street—we are torn between the desire to keep our rheumatic children in hospital and the constant urgent necessity for the admission of acute cases.

The experiment to which I refer began shortly after the opening of the Baskerville Residential School for Cripples at Harborne, within a few miles of the centre of the city. At that time I certified a few rheumatic children among my out-patients at the General and Children's Hospitals as "physically defective within the meaning of the Act," and took them into Baskerville for periods of six or twelve months.

The considerations which induced me to choose a residential cripple school for the purpose were the following:

(1) Life in a cripple school is lived at a slow pace, which seemed peculiarly suitable for rheumatic children.

(2) One of the difficulties in an ordinary convalescent home is to ensure rest for the nervy rheumatic child. Example outweighs precept in the treatment of children, and I hoped that the unruly rheumatic girl might be induced to rest more willingly if next to her were placed a child totally immobilized for months in a plaster case or box-splint. This, indeed, proved to be the case.

(3) I was satisfied that rheumatic children do not do well while living a vegetable life—"of blind unreasoning rest," as Dr. Poynton puts it. They are frequently unusually intelligent and tend to become neurotic if left without mental occupation. For this reason a school is preferable to a hospital. In passing, I may say that Miss Smith, the head mistress, to whom so much of the success of the school is due, has been engaged for some time on an inquiry to determine the best methods of education—very much in the way suggested by Dr. Poynton. At some future date, indeed, in collaboration with Miss Bridie, we hope to publish a report on the investigation of the changes of mentality in children resulting from various diseases.

(4) For obvious administrative reasons it is a great advantage to dilute the population of a cripple school with a number of children who can to a certain extent look after themselves.

So remarkable was the improvement of these rheumatic children at Baskerville (even of those who had shown none after long periods of treatment in hospitals and convalescent homes) that we have now decided to allot half the available beds to them. In all probability we shall have fifty places for them before long. We shall most certainly need more. I cannot discuss all the points raised by Dr. Poynton. We have not found elaborate control of exercise by graded walks and slopes necessary: simple dancing is very valuable.

It would ill become me to discuss imperfections of medical education, but I cannot forbear remarking that a curiously large number of rheumatic children have passed some time in sanatoriums and other places for the tuberculous, and that about 15 per cent. of the children sent to me for admission to the open-air schools are rheumatic.

This letter is already too long; my aim in writing it is to indicate what can be done by a local education authority of courage and vision. It would be ungrateful of me not to acknowledge the support of Councillor Miss Martineau in this undertaking; only those who know what is involved in the defence of estimates at council meetings in hard times can appreciate how much of the realization of Baskerville is due to her.—I am, etc.,

Birmingham, June 8th. A. P. THOMSON.

DISEASED TONSILS AND HEART DISEASE.

SIR,—In your issue of June 9th (p. 995) Mr. Carruthers asks, "What is a 'diseased' tonsil?" It is a question which many of us must often have asked ourselves, but without arriving at a more satisfactory answer than if we had faced the old queries "What is truth?" or "What is fame?" Whatever replies we make must be influenced by "relativities." In any discussion on disease of the tonsils few will dissent from the following statements:

1. It is impossible by mere inspection to say whether a tonsil is healthy or diseased.
2. A large tonsil may produce no other effects than those brought about by mechanical obstruction of the upper air passages, the middle-ear clefts, etc.
3. A small but buried and septic tonsil may be the cause of a number of local and constitutional symptoms, which vary in their situation as well as in their gravity.

In his second paragraph Mr. Carruthers says, with reference to the definition of an "unhealthy" or "diseased" tonsil, "that this is a question of real practical value which has never been satisfactorily answered." I would venture to say that a practical solution is more easily given than any verbal definition which would include all the points at issue.

When a tonsil is "unhealthy" or "diseased" it will nearly always produce, sooner or later and in greater or less degree, local or constitutional symptoms.

In a child two of the common symptoms are enlarged glands behind the angle of the jaw—an evidence of infection from the tonsils—and mild bouts of pyrexia for which there may be no apparent cause—that is, the patient's general health is fairly good, and the fever lasts for only one, two, or three days.

In adults "diseased" tonsils are often small and buried between the faucial pillars, so that they do not arouse suspicion, but if the outer area of the tonsil be pressed upon foul-smelling purulent débris can often be expressed from the crypts. As a general rule adults are more liable than children to suffer from the more chronic constitutional symptoms of septic absorption, such as "muscular rheumatism," "rheumatoid arthritis," neuritis, various skin eruptions, and such diseases of the eye as keratitis punctata, irido-cyclitis, etc.

Such facts must be common knowledge to those who have given much attention to diseases of the throat, and I venture to state them because the practical answer to Mr. Carruthers's question is "the only thing that matters."—I am, etc.,

London, W., June 9th. HERBERT TILLEY.

SIR,—In his very interesting lecture on this subject published in your issue of June 2nd, Dr. Poynton says, "It would be in my opinion a mistake to suggest the wholesale removal of tonsils in rheumatic children and those suspected of rheumatism, when there is no evidence that they are diseased."

We have recently analysed the subsequent history of 144 patients admitted to Guy's Hospital for acute rheumatism; some of them had their tonsils removed, the others had no operation. Rheumatic infection recurred quite as frequently among the former as among the latter. The exact figures will be published in the next issue of the *Guy's Hospital Reports*, and they certainly do not support the belief that tonsillectomy is likely to prevent the recurrence of acute rheumatism. While we think that tonsils which are definitely septic ought generally to be removed, we entirely agree with Dr. Poynton that there is no justification whatever for the enucleation of tonsils as a routine measure in every rheumatic child.—We are, etc.,

G. H. HUNT,
A. A. OSMAN.

London, W., June 8th.

THE COMMITTEE ON VENEREAL DISEASE.

SIR,—In the Report of the Trevethin Committee, paragraph 25 (referred to on page 978 of your issue of June 9th), a recommendation is made that

"Increased facilities for medical supervision of women during pregnancy is desirable, and may in part be obtained by an extension of the system of ante-natal clinics, and by *the instruction of midwives, who would refer suspicious cases to a doctor.* In this connexion we would also call attention to the *importance of including instruction on venereal diseases in the general training of midwives and nurses.*" (The italics are mine.)

I would point out that the Rules of the Central Midwives Board provide for both these desiderata. All pupil midwives are bound to receive instruction in venereal diseases, as Rule C, which prescribes the subjects of examination, includes amongst such subjects, the venereal diseases (syphilis and gonorrhoea) in relation to their signs, symptoms, and dangers in women and children and to the risks of contagion to others.

As to referring suspicious cases to a doctor, Rule E 20 requires a midwife in all cases of illness of the patient or child, or of any abnormality occurring during pregnancy, labour, or lying-in, as soon as she becomes aware thereof, to call in to her assistance a registered medical practitioner. Rule E 21 (2) (3) makes Rule E 20 particularly applicable in the case of a patient suffering from a purulent discharge or sores of the genitals. In fact, no midwife can fail to call in medical help and to notify to the Local Supervising Authority without rendering herself liable to have her name removed from the roll.

In addition, I would point out that all midwives on their enrolment receive, together with the Rules which regulate their practice, a copy of two leaflets drawn up at the request of the Board by the Chairman, Sir Francis Champneys, in 1916, setting forth in detail the signs and symptoms of these diseases, their dangers both to mother and child, and the necessity for prompt medical help. Copies of these leaflets I enclose.

The Board's Rules do not seem to be known to some of those who deal with matters of public health. It might be well, before making recommendations for the improvement of the training and practice of midwives, to ascertain what such training and practice include as a matter of fact. A few weeks ago I had to draw attention to advice of a similar nature given at a meeting of the Royal Society of Medicine with regard to cancer.—I am, etc.,

London, S.W., June 11th. H. G. WESTLEY.

DIPHTHERIA ANTITOXIN ON SUSPICION.

SIR,—I have read Dr. F. Foord Caiger's letter in your columns (June 9th, p. 986) with interest, more particularly as I have recently been dealing with a case, in which it was desired that all contacts should receive a prophylactic dose of antidiphtherial serum.

These I administered to seven persons; but I should like to know what the chances of anaphylaxis are, should any of these patients develop diphtheria, say, in two or three weeks, or later, and require a further dosage.

I am in the same quandary when I have to deal with a motor or other accident, complicated with much road dirt, in an ex-soldier who, wounded during the war, received the usual antitetanic injections. Up to a limit of eight days, I take it, there is very little fear of anaphylaxis with a succeeding injection of serum. After that there is, of course, a danger—but for how long does this danger persist? Exceptionally a case of anaphylactic reaction occurs with even a first administration of serum.—I am, etc.,

Sevenoaks, June 11th. GERALD SICHEL.

THE NATURE OF BLOOD SUGAR.

SIR,—We have read Dr. Hewitt's letter in the BRITISH MEDICAL JOURNAL, June 9th (p. 994), and find that there are two points which require explanation.

In our article of May 26th we wrote "figures 1 and 2." It should have been "figures 2 and 3." We tender our apologies for this and hope that he will now be quite clear as to our meaning with regard to his experiments.

The laevo-rotation referred to by us was obtained since our original paper was published.—We are, etc.,

W. SMITH
Cambridge, June 9th. L. B. WINTER.

PERNICIOUS ANAEMIA.

SIR,—In reply to Dr. Gordon Ward's questions:

1. The reason why the erythrogenic marrow increases in area and activity surely denotes an attempt on the part of the host to manufacture new red cells to replace those haemolysed in the circulation.
2. In pernicious anaemia the spleen is only rarely enlarged, and there is no evidence that in this disease haemolysis takes place mainly in the spleen. The statistics of splenectomy show that no patient has ever been cured and only a degree of improvement occasionally results.
3. Inasmuch as the patient is not dead, how do we know that the marrow can return to normal?
4. The histological structure of the bone marrow is entirely different from that of the spinal cord and alimentary canal, and one would hardly expect fibrosis, for instance, to occur.

I repeat that I deprecate the opposition between the clinician and the pathologist. My point was that clinical signs of this lethal change in the bone marrow are indefinite, and that the characteristic changes in the blood, to which I have referred, usually establish the diagnosis. I am not surprised that even Dr. Gordon Ward admits that this view is widely held. I find that in 26 cases of my own where these changes were found, and in which pathological opinion was sought because the clinical signs were at the time indefinite, 21 ultimately died directly of the disease, and in the remainder it was not possible to obtain a reply from the clinician. In none, incidentally, was combined degeneration of the cord, which Dr. Gordon Ward apparently regards as an important part of the syndrome, present.—I am, etc.,

A. KNYVETT GORDON, M.B., B.C.,
London, W.C., June 1st. B.A.Cantab.

*** We cannot continue this correspondence.

POLYTHELIA.

SIR,—Either supernumerary nipples (without a supernumerary mamma) are less rare than Dr. Douglas Howat's memorandum in the BRITISH MEDICAL JOURNAL of June 2nd (p. 928) would indicate, or I have been fortunate. I happen to have seen three cases at least in my practice, and all had the following characters:

1. Position: on the left side, below the normal mamma, the accessory nipple being internal to the normal one.
2. Size: small, much less than the normal nipple. In no case did the patient recognize the nature of the "birth mark," which caused no symptoms.
3. Sex incidence: all the cases were males.

These little appendages are not, of course, "rudimentary," as is too often stated; many writers fail to comprehend the difference between a rudiment and a vestige, though the former is a dawning structure, the latter a disappearing one. The accessory nipple is hardly even a vestige, but rather an atavism, throwing back to the multiple nipples of mammalian ancestors.—I am, etc.,

Sale, Manchester, June 9th. GRAHAM RENSHAW.

THE ENDOWMENT OF GENERAL PRACTICE.

SIR,—Medical practice, especially general practice, is the subject of a good deal of discussion at the present time, much of it prejudiced and ill informed, but all of it, well informed or ill informed, demanding careful consideration by the medical profession, if it desires to control its own development instead of having this arranged for it by politicians and other more or less well meaning people. Two questions are now in the forefront of all these discussions: the Hospital Saving Association's scheme, and the panel system of National Health Insurance.

The latter question—that is, its retention, with or without modification, or its abolition—is of the two certainly the more widely and hotly discussed by the public. The panel doctor is being held up to much, I believe undeserved, opprobrium, not altogether regretted by the non-panel practitioner, who assumes that he would do better for the other man's patients. The other question is receiving attention from a number of general practitioners, who consider that it will lead to the hospitals encroaching still further on

the field of the family's doctor work, an encroachment which they consider will not be to the advantage of doctor, patient, or the community.

If the family doctor could employ for all his patients the methods of diagnosis, and, above all, the methods of treatment, which are employed in a hospital, his contention that any encroachment of the hospital on his present sphere of work would be bad for the patient and the community would hardly need arguing; even under present conditions there is much to be said for the contention that the good family doctor, the member of that largest section of the profession on which devolves the main work of maintaining the health of the community, is the one from whom in the majority of cases the patient will obtain the greatest benefit. But if the general practitioner with his more intimate knowledge of the life and surroundings of his patients possesses in this respect a great advantage over the hospital doctor, yet in the matters of diagnosis and treatment he is placed at a great disadvantage. It is, no doubt, in great measure because he recognizes these hospital advantages that the patient seeks hospital treatment and not only because by resorting to a hospital he will save his pocket. Again, it is because he lacks these advantages and not from laxity in his work that the panel doctor is unable to deal with the ailments of many of his patients satisfactorily, and the non-panel doctor is in no better position.

I have been saying and writing this for the past three years, but now I learn that Mr. Waring, vice-chancellor of London University, has been saying much the same thing, only his cure for this state of affairs—namely, extension of hospital accommodation—differs fundamentally from mine. I would suggest the development of centres on the lines of the primary centres of Lord Dawson's much discussed scheme. The Kensington (B.R.C.S.) centre for physical treatment demonstrates the lines on which such institutions might be run without interfering with general practice, but modifications associating the general practitioner more closely with the work are required. To a great extent these centres would ultimately be self-supporting, but, if not, is it not foolish not to endow the work of the general practitioner in the same way as is the work of the hospital physician or surgeon?

Sir Thomas Horder, demonstrating the work of one of the new consultants' clinics, expressed his belief in "the urgent desirability of great and even drastic changes in medical practice." Again, I agree, but here also my remedy is different. The future of medicine, as experienced by the general public, must lie in the work of the general practitioners. Are they never going to take their proper place in the direction of medical progress? Are they always going to content themselves with destructive criticism of schemes developed by other sections of the profession? Let them but develop the spirit of co-operation and all other things shall be added unto them.—I am, etc.,

Kensington, June 10th. HAROLD H. SANGUINETTI.

Obituary.

J. DELPRATT HARRIS, M.D.,

Consulting Surgeon, Royal Devon and Exeter Hospital.

MR. DELPRATT HARRIS of Exeter died on May 30th, aged 73. He belonged to an Exeter family which had long been associated with the Royal Devon and Exeter Hospital, his grandfather, Mr. John Harris, F.R.C.S., having been appointed surgeon to the institution in 1815.

John Delpratt Harris received his medical education at St. Bartholomew's Hospital; he took the diplomas of L.S.A. in 1871, and M.R.C.S.Eng. in 1872, and graduated M.D.Durh. in 1903. On the death of Mr. C. H. Roper in 1881 he became surgeon to the Royal Devon and Exeter Hospital, and in 1904 was appointed to organize and take charge of the new electrical department installed through the munificence of Mrs. Sanders of Stoke Hill. On retiring under the age limit in 1915 he was appointed consulting surgeon. In 1889 he presented the hospital with a portrait in oils of his grandfather, which now hangs in the board room. He also presented the institution with £100 for investment in order to provide a sum to assist the orthopaedic department to supply appliances to patients on their discharge. The gift was a thank-offering for thirty-four years' health and strenuous work, and in memory of his family's long connexion with the hospital, but more especially as a memorial to his son, who, after having passed all his medical examinations, died in 1915 from meningitis whilst holding an appointment at a hospital in London; his death was a very heavy blow both to Mr. and Mrs. Harris. Mr. Harris enjoyed a large private practice, and during the war provided electrical treatment for wounded soldiers at his residence in Southernhay.

After his retirement from the active work of the Royal Devon and Exeter Hospital, Mr. Delpratt Harris wrote a comprehensive history of the institution; this was reviewed in our issue of May 27th, 1922 (p. 841). He was president of the South-Western Branch of the British Medical Association in 1903, and subsequently became a vice-president. He was also president of the Section of Electro-therapeutics of the Annual Meeting of the Association held at Exeter in 1907. Mr. Harris took great interest in local affairs, and was appointed a sheriff in 1897; for many years he was a justice of the peace. A man of much culture, he was an interesting companion, being well informed on many subjects. He was interested in astronomy, having inherited from his father a well equipped observatory; he also took great interest in music, and was a talented amateur violinist.

GEORGE FREDERICK MURRELL, M.B.LOND.,

Physician, Royal Berkshire Hospital, Reading.

THE death of Dr. G. F. Murrell, at the age of 55, after a brief illness has cast a gloom over the whole of Reading. A few weeks ago he suffered from a carbuncle under the arm, from which he apparently recovered, and after a short change in the country resumed his work. It was obvious, however, that he was not well, and no doubt his resisting power had been severely diminished. At the end of May he developed cellulitis of the scalp, which proved to be of streptococcal nature, and spread rapidly, the end coming on June 5th with virulent bronchopneumonia and thrombosis of the cavernous sinus.

He was born at Ealing, and received his early education at University College School; afterwards he entered as a medical student at St. Bartholomew's Hospital. He took the diplomas of M.R.C.S., L.R.C.P., in 1890, and graduated M.B. of London in 1893. He subsequently held the posts of house-surgeon at St. Bartholomew's Hospital and house-surgeon and house-physician at the West London Hospital. After serving as ship's surgeon on two occasions, he settled in Reading in private practice in 1896. From the commencement of his career it was obvious that Dr. Murrell was imbued with the highest ideals of the profession, and it is not surprising that he not only made his practice a success, but also gained the respect of his colleagues, and the confidence and affection of his many patients.

In February, 1913, he was elected assistant physician to the Royal Berkshire Hospital, and had been physician since 1919. During the war, as captain in the R.A.M.C.T., he served first in Oxford, and afterwards as officer in charge of a large Section Hospital in Reading. He was a member of the Reading Division of the British Medical Association.

Outside his profession Dr. Murrell interested himself in many social activities, was Warden of his Church, a Past Master of his Masonic Lodge, and as a keen Conservative assisted in numerous elections that took place in the borough.

The news of his death came as a great shock to his numerous patients and friends, to whom he had endeared himself by the charm and beauty of his character, his intense sympathy with those in sorrow or in pain, and by those sterling qualities which are well described as typical of the "Beloved Physician."

A memorial service was attended by very many of his medical colleagues and a vast number of his patients and fellow citizens on June 8th; he was laid to rest at Chideock with every manifestation of sorrow on June 9th. He leaves a widow, two daughters, and a son to mourn their loss.

Universities and Colleges.

UNIVERSITY OF OXFORD.

THE following candidates have been approved at the examinations indicated:

D.P.H.—*Part I:* W. H. Butcher, W. Champneys, M. J. Saldanha.
Part II: W. Champneys, Mary P. Wilson.

UNIVERSITY OF CAMBRIDGE.

AT the special congregation held on June 12th Dr. William Henry Welch, Director of the School of Hygiene and Public Health of Johns Hopkins University, and President of the Board of Scientific Directors of the Rockefeller Institute for Medical Research, received the degree of LL.D., *honoris causâ*. In his Latin speech of presentation Dr. T. R. Glover, the Public Orator, described Dr. Welch as having dedicated the whole of his life to medicine, working to search out the secrets of Nature and to combat disease before it made its appearance; he was the high priest in the temple dedicated by Rockefeller to the goddess Hygeia Propugnatrix.

At a congregation held on June 8th the following medical degrees were conferred:

M.D.—S. L. Bhatia.
M.B., B.CH.—G. Habgood.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

THE following have, after examination, been admitted as Fellows of the Faculty: Robert Alexander Anderson, George Dalziel, M.C., Leander Lowrie Fife, George William Hill, James Hogg Martin, and Sundar Das Sondhi.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

THE following, having passed the necessary examination, have been duly admitted Members of the College: Jamna Vinayak Dhurandhar and Francis Joseph O'Donnell.

The Services.

ROYAL COMMISSION ON INDIAN SERVICES.

THE promised Royal Commission on the Superior Civil Services in India has been appointed, with Viscount Lee of Fareham as chairman. The other members are Sir R. H. Craddock, late Lieutenant-Governor of Burma; Sir Cyril Jackson; Sir Chimanlal Harilal Setalvad, barrister, vice-chancellor of Bombay University; Sir Muhammad Habibullah, a member of the council of the Governor of Madras, who has in various ways shown his interest in Mohammedan educational movements; Pandit Hari Kishan Kaul, commissioner of the Juliundur Division, Punjab; Mr. David Petrie, Indian Imperial Police Service; Mr. Bhupendra Nath Basu, vice-chancellor of the Calcutta University and a member of the Council of the Secretary of State for India; and Mr. Reginald Coupland, Beit professor of colonial history, Oxford. The reference to the Commission is as follows:

1. The organization and general conditions of service, financial and otherwise, of the Superior Civil Services in India.
2. The possibility of transferring immediately or gradually any of their present duties and functions to services constituted on a provincial basis.
3. The recruitment of Europeans and Indians respectively for which provision should be made under the constitution established by the said Act and the best methods of ensuring and maintaining such recruitment, and to make recommendations.

Communications should be addressed to the Secretary to the Royal Commission, India Office.

Medical News.

THE annual general meeting of the Research Defence Society will be held at the house of the Medical Society of London, 11, Chandos Street, Cavendish Square, on Wednesday next, June 20th, at 3.30 p.m. The chair will be taken by Lord Lamington, and Dr. C. W. Saleeby will give an address on sunlight and disease. The annual report draws attention to the efforts, dating from 1909, of the opponents of scientific medicine to prejudice the minds of members of the Labour party by spreading falsehoods and fostering distrust of the medical profession. The society is prepared to assist in meeting such allegations on the spot and has a considerable collection of lantern slides suitable for illustrating lectures.

The Prince of Wales will visit the country branch of the Royal National Orthopaedic Hospital, Brockley Hill, Stanmore, Middlesex, on the afternoon of Saturday, June 23rd, when he will lay the foundation stone of the nurses' home and formally open the new hut.

SIR ROBERT PHILIP, Professor of Tuberculosis in the University of Edinburgh, will be the speaker at the annual meeting of the Paddington Tuberculosis Dispensary at 8.30 p.m. on Monday, June 25th.

BY the death of Princess Christian, aunt of the King, the hospitals and the nursing profession have lost a good friend. It is said that as a girl Princess Christian was anxious to take a full course of training at a London hospital, and she always showed a great interest in nursing and in public health activities. She was long president of the Royal British Nurses Association; she was one of the founders of the training college for children's nurses at Manchester, which bears her name; she took up and helped forward schemes for improving workhouse infirmaries and for providing nurses for the sick poor; and at the time of her death she was president of the National Health Society, in the work of which she was deeply interested.

THE annual dinner of the Indian Medical Service will be held at the Trocadero on Wednesday, June 20th. Tickets and all particulars may be obtained from the joint honorary secretary, Colonel J. J. Pratt, I.M.S.(ret.), 63, Addison Road, Kensington, W.14.

OWING to the necessity of carrying out extensive repairs and alterations, Westminster Hospital will be closed for in-patients from July 2nd next for about six months. Out-patients will be treated at Westminster Hospital Medical School, 12, Caxton Street, but no casualty cases will be dealt with. There is no record of the doors of this historic institution having been shut in the whole period of over 200 years since it was founded. Substantial improvements will be made in the wards and in the out-patient department, an additional operating theatre will be built; the *x*-ray, massage, and other departments will be brought up to date, and better accommodation for the nurses will be provided in a home outside the hospital. The cost will be about £45,000, for which a special appeal will shortly be made.

RECENTLY conferences of the Presidents of the various Sections of the Royal Society of Medicine have been held to consider whether the Sections might work together without interfering with their entire freedom of action, and as the first result of these conferences it has been decided during next session (1923–24) that the following discussions should be arranged upon dates to be settled later and announced on the diary cards: By the whole society—(1) the possible substitutes for cocaine, (2) the grading of the population from the point of view of bodily fitness, (3) chronic abdominal pain in nervous women. By the sections concerned—(1) the treatment of severe gastric and duodenal haemorrhage, (2) birth injuries, (3) the uses and limits of vaccine therapy, (4) vertigo, (5) the surgical treatment of pulmonary tuberculosis, (6) post-operative and puerperal mental disorders.

AT the meeting of the board of management of the King Edward VII Hospital, Cardiff, on June 7th, it was announced that Royal assent had been given to change the name of the institution, which will in future be known as the Cardiff Royal Infirmary.

DR. T. H. C. STEVENSON, C.B.E., of the General Register Office, will read a paper on the social distribution of causes of death in England and Wales, at a meeting of the Society of Biometricians and Mathematical Statisticians to be held in the theatre of the Galton Laboratory, University College, Gower Street, on June 25th, at 8 p.m. Visitors will be welcomed.

DR. F. M. ROWLAND, C.B.E., of Lichfield, vice-chairman of the Walsall and Lichfield Division of the British Medical Association, has been made a justice of the peace for the city of Lichfield.

THE Glasgow Post-Graduate Medical Association has arranged post-graduate courses in the various hospitals of Glasgow during the summer months. Full particulars can be obtained on application to the Secretary, Post-Graduate Medical Association, the University, Glasgow.

THE annual general meeting of the Medico-Legal Society will be held at 11, Chandos Street, W.1, on Tuesday, June 19th, at 8.30 p.m., and will be followed by an ordinary meeting, when Dr. A. S. Woodwark will read a paper on some attempts to defraud life assurance companies.

THE Mayor and Corporation of Harrogate will, on Saturday, June 30th, entertain a party of guests who will have travelled to Harrogate by the new pullman car train which the London and North-Eastern Railway Company and the Pullman Car Company have arranged to run in future between London and Leeds and Harrogate.

AT the annual meeting of the Nottingham Children's Hospital on June 6th Mr. J. D. Player announced that plans had been prepared, according to the suggestions made by Dr. Mackintosh, for the erection of an entirely new wing which would when completed afford accommodation for 68 beds, or double the number at present available. He also stated that he and his wife had handed to the trustee a sum which it was thought would be sufficient to cover the cost of building and equipping the new wing.

AT the last meeting of the Oldham Board of Guardians the resignation was accepted, with regret, of Dr. Frank Radcliffe, visiting surgeon to the Boundary Park Hospital. Dr. Radcliffe, who is a member of the Council of the British Medical Association and a member of the Insurance Acts Committee, has held the post of visiting surgeon for over eleven years. The Chairman said that by Dr. Radcliffe's retirement the board and the patients in the hospital were losing the services of one who had served the public well and faithfully. It was resolved that a record of the board's appreciation should be made in the minutes.

A SERIES of free lectures to nurses on venereal diseases, by Mr. Leonard Myer, honorary surgeon to out-patients at St. Paul's Hospital for Skin and Genito-Urinary (including Venereal) Diseases, were commenced at the hospital, Endell Street, Holborn, W.C.2, on June 8th, and will be continued on Fridays, June 15th, 22nd, and 29th, at 5 p.m.

THE following promotions in the Order of the Hospital of St. John of Jerusalem in England have been announced:—As Knights of Grace: Major Arthur H. Johnston, O.B.E. (from Esquire), Dr. George H. R. Holden (from honorary Associate), Dr. Harry George Waters (from honorary Associate); as Esquires: Captain James Anderson, M.D. (from honorary Associate), Major Cecil Henry Elmes, C.B.E., V.D., M.B. (from honorary Associate).

DR. WILLIAM MACKIE, medical officer of health for Elgin, was entertained at dinner on June 1st to signalize the honorary degree of LL.D. recently conferred upon him by the University of Aberdeen in recognition of his eminent work. During the proceedings Dr. Mackie was presented with a silver salver of Chippendale pattern and Mrs. Mackie received a diamond ring.

THE annual general meeting of the Lebanon Mental Hospital, Asfuriyeh, near Beyrout, Syria, will be held at 11, Chandos Street, W.1, on Tuesday, June 19th. The chair will be taken by Dr. E. W. G. Masterman at 3.30 p.m. The director of the hospital, Dr. H. Watson Smith, O.B.E., will be present to give information and Bishop Bury has promised to speak.

THE Medico-Legal Institute, which was inaugurated in the Place Mazas, Paris, on May 24th by M. Strauss, the Minister of Hygiene, combines in the same building the Morgue, the laboratory of legal medicine of the Faculty, and the laboratory of toxicology of the Prefecture of Police. The old Morgue behind Notre-Dame has now ceased to exist.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London;* telephone, 2630, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London;* telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Mediocra, Westrand, London;* telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin;* telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh;* telephone, 4361, Central).

QUERIES AND ANSWERS.

INCOME TAX.

"A. B. UGANDA" inquires as to the liability of a British subject residing abroad in respect of (*a*) interest on French Government stock, and (*b*) dividends on British railways.

*** (*a*) He is not liable to tax in respect of this (non-British) income, and can claim repayment of any tax that may have been deducted. (*b*) He is entitled to claim in respect of the usual allowances, but only on a proportional basis; for example, suppose he has £750 from Uganda, £250 from France, and £250 from this country, then he is entitled to claim repayment in respect of 250/1250 of the usual allowances. The income tax statutes do not now allow the British income in such a case as this to be treated as if it were the sole income of the claimant.

LETTERS, NOTES, ETC.

AUTOGENOUS VACCINE IN PUERPERAL FEVER.

DR. JOHN VEITCH (Cowdenbeath) writes: In a note on the curative use of autogenous vaccines in puerperal fever (October 7th, 1922, p. 644) I remarked on the futility of stock serums and stock vaccines. Recently I encountered another case of puerperal fever, and I ordered an autogenous vaccine to be prepared. Unfortunately the patient died before the vaccine was ready, so I laid it aside. Some time later I encountered two cases of puerperal fever. I examined the discharge in both and found streptococci. Further, from the cachectic appearance of both patients I concluded that haemolytic streptococci were causing grave damage. I immediately made use of the vaccine I had in hand, which contained a great number of streptococci. The results were excellent in both cases. This indicates the possibility of almost instantaneous specialized treatment in puerperal cases. I took the precaution of having an autogenous vaccine made from one of the cases to be in readiness for future use.

CARDIAC DILATATION AND HYPERTROPHY.

DR. ERNEST KINGSCOTE (London, W.) writes: I was very much interested in Dr. Claude Wilson's able article entitled "Limitation of effort in heart disease" in your issue of June 9th, p. 962, and was glad to see that he emphasized *enlargement* as a definite sign of heart trouble. Two points, however, strike one: (1) Where he states "It is often impossible to distinguish between dilatation and hypertrophy," and (2) "all the means at our disposal for estimating the size of the heart are open to fallacy. Percussion is perhaps the least reliable." To these I would briefly reply: (1) The dilated heart can be reduced in size, then and there, by a few resisted movements, whereas, of course, the hypertrophic heart cannot be so reduced; and (2) my plexímeter, described in *The Lancet*, 1896, claims to be an instrument of precision, wherewith a deep-seated organ, even when overlaid by an air-containing viscus, may be percussed out to the fraction of an inch. The plexímeter may be obtained from Messrs. Down Bros., surgical instrument makers, Thomas Street, Borough.

CHRONIC TRAUMATISM OF SOFT TISSUES.

DR. CHARLES J. HILL AITKEN (Kilnhurst, near Rotherham) writes: A year ago a middle-aged man showed me an ulcer on the outside of the terminal phalanx of his right ring finger. He had noticed it for some weeks and he was worried as a near relative had died of cancer. Under a simple dressing, kept on continuously, the ulcer healed in a few days. A month later the ulcer reappeared. I was puzzled until I noticed his fingers were peculiar in that they were short and curved inwards, the right little finger especially, so that when his fingers were in apposition the nail of this finger touched the outer side of the ring finger exactly where the ulcer was. With a simple dressing and attention to keeping the nail cut the ulcer vanished and has not recurred.

A man complained of redness and scurfiness on the upper edge of his ears. This had worried him for a month or two. A friend of his had developed cancer of the ear. I thought of trauma but did not discover what it was till the patient put on his spectacles, remarking, "I find them a nuisance as I am always taking them on and off." (He was presbyopic.) The legs were of steel, rather hard, slightly rusted, and the curl ends were a tight fit. I recommended a pair of rolled-gold spectacles and of a larger size. Very soon the redness and scaliness passed away and have not returned. The ointment I gave him was never used—"Too messy and I always forgot."

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 29, 30, 31, 34, 35, and 36 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 32 and 33.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page *267*.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Six lines and under	0	9	0
Each additional line	0	1	6
Whole single column (three columns to page) ...	7	10	0
Half single column	3	15	0
Half page	10	0	0
Whole page	20	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, W.C.2, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.